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ABSTRACT

This 206-item annotated bibliography focuses on projects which place the use of new communications technologies within an educational planning framework and which acknowledge the need for communications satellites to be considered as part of a total telecommunications system. Though citations included relate primarily to the uses of telecommunications or communications satellites, some material on the educational use of broadcasting is also listed. Most of the documents and journal articles cited were originally located through a May 1982 search of the following major educational databases: Resources in Education and the Current Index to Journals in Education (from 1969), Australia Education Index (from 1957), and British Education Index (from 1972). Topics and projects addressed in the articles include the Appalachian Education Satellite Project, distance education, Home Loan Video, Dial Access, project evaluation, videotex, teleconferencing, audio tutorials, and new technologies. Key words are listed with each abstract. An appendix briefly describes eight projects funded by the Commonwealth/State Advisory Committee on the Educational Use of Communications Technology (ACEUCT). (LMM)

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Satellites, telecommunications and education:

A resource guide for Australian educators

Edited by Peter B. White

Commonwealth/State Advisory
Committee on the Educational
Use of Communications Technology

November, 1983

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ACKNOWLEDGEMENTS

This guide could not have been prepared without the enthusiastic support of a number of people. Michael Davis provided research assistance and the library staff of La Trobe University and the Australian Council for Educational Research gave invaluable help. Many people offered material for inclusion in the guide. In particular the contributions of Lesley Albertson, Don Ely, and members of the ACEUCT should be noted. Thanks also go to Murray Taylor for the timely development of computer software, Helen Chait who typed the original text and Jeanette Wissell who designed the cover. And finally, this project could not have been completed without the able administrative support of Noel Haberecht, the Secretary of the ACEUCT.

INTRODUCTION

The planning of Australia's domestic communication satellite system, AUSSAT, has stimulated debate about many aspects of Australian life. While most public attention has focused on the implications of the satellite for commercial television networking and the future role of Telecom, another, less public debate has been underway. This debate has been concerned with the educational applications of the new communications systems which will be made possible by AUSSAT.

Educators have participated in the public debate about an Australian domestic communication satellite ever since that issue was first raised by the Commonwealth government. While educators and educational authorities have given evidence to various public inquiries into a domestic satellite system, and several conferences have been held, another tangible example of educational interest in these issues has been the establishment of the Advisory Committee on the Educational Use of Communication Technology (ACEUCT) by the Conference of the Directors General of Education. Charged with the task of stimulating interest in, and supporting the educational applications of telecommunications and communication satellites, the ACEUCT has funded a series of experimental projects which use telecommunications for educational purposes. Details of those projects can be found in Appendix A.

While considering how current and potential experimenters might be assisted, the ACEUCT decided to prepare and distribute a guide to the literature on the educational uses of telecommunications. Satellites Telecommunications and Education: A resource guide for Australian educators is the result of that decision.

Two assumptions have guided the selection of material for this guide. The first that the successful use of telecommunications for educational purposes requires a careful analysis of educational goals and the subsequent design of a communication system which can meet those goals. This means that preference has been given to projects which place the use of new communications technologies within an educational planning framework.

Another assumption made during the compilation of this guide is that communication satellites must be considered as one part of a total telecommunications system. Preference has been given to the inclusion of material which acknowledges this issue.
The editor accepts full responsibility for the selection and annotation of the items included in this guide. Because there is a vast literature in this area it is possible to overlook important items. Readers of the guide are invited to propose items which might be included in a future edition.

Peter B. White
La Trobe University
November, 1983

NOTES FOR USERS

Coverage of the guide.
Material was included in this guide if it related to the uses of telecommunications or communication satellites for educational purposes. (A particular interest was in the area of distance education.) Material on the educational uses of broadcasting is also included but this is not a major emphasis. There is almost no material on the educational uses of computers. The rationale for these decisions is that the major changes which will arise as a result of Australia's domestic communication satellite will be in the area of telecommunications and to a lesser extent broadcasting. And even though there is a rapid development of in the area of educational computing the networking of computers for educational purposes is only in its infancy.

Much of the material was located through a search of the major educational databases. This search was undertaken in May, 1983. Databases covered were:

Resources in Education- from 1969.
Current Index to Journals in Education- from 1969.
Australian Education Index- from 1957.
British Education Index- from 1972.

Availability of documents
Almost all of the documents listed should be available from major libraries. If particular documents or journals are not held, it should be possible to obtain copies using the inter-library loan system. Documents available from the ERIC system have their ERIC number listed. (This is the number commencing with ED.....) Again, ERIC documents are readily obtainable using inter-library loan. If you experience any difficulty obtaining a copy of a document it would be best to contact the publishing organization. Neither the editor nor the ACEUCT can act as a clearinghouse for loan requests.

Submission of additional documents
As noted in the Introduction, there are almost certainly going to be items which have been overlooked and not included in this publication. The Editor welcomes items which can be considered for inclusion in any possible future edition.

Dissemination of research
It is quite obvious that a great deal of interesting work related to telecommunications and education has been completed or is underway in Australia. For a number of reasons the reports of that research are not always widely distributed. The experience gained from this project suggests that researchers should send a copy of their reports to the Australian Council for Educational Research, Frederick Street, Hawthorn, Victoria 3122. This means that it will be noted in the Australian Education Index. Another copy should be sent to the ERIC Clearinghouse on Information Resources, School of Education, Syracuse University, Syracuse, N.Y. 13210, U.S.A. Acceptance by the ERIC system would mean that the document would be indexed and distributed worldwide.

ANNOTATED BIBLIOGRAPHY

#100
ALBERTSON, L.A.
"The Bird and Beyond," Education News, vol.17, no.5 (1980), pp.15-17.

This article discusses the educational needs of remote or isolated communities, in the context of the debate over the introduction of an Australian domestic communications satellite.

The author argues that the planning and implementation of distance educational services (i.e. tele-education) should be based on the particular needs of the intended audience, and that these needs, and educational technologies evolve over time. Examples cited are the educational uses of telephones by the Open University in the United Kingdom, and by the University of Wisconsin's Educational Telephone Network.

The different approaches to tele-education by engineers and educators are then discussed. The author argues that, whilst engineers aim to "translate the classroom into remote areas", educators are concerned with "designing educational programs to fit individual student needs".

Moreover, each group sees the others' expertise as subsidiary to its own. Thus, to engineers, the role of educators is simply to provide the information content for their own communications system; whilst educators perceive the engineers' task as being merely to design the physical artifacts necessary to achieving the educational visions of educators.

The problems raised by this clash between these two approaches are examined with reference to three types of communications technologies: broadcast systems, narrowcast systems (including cable television, and videotex or viewdata), and interactive systems (includes handset and loudspeaking telephones).

The author concludes by re-stating her main theme that, rather than technologically oriented planning, which seeks to introduce new technology for its own sake, there should be a more needs-based approach to tele-education.

:communications satellites
:teleconferencing
:communications planning
:educational planning
:telephone in education
:social issues

#101
ALBERTSON, L.A., and BEARLIN, K.S.
Melbourne Telelink: A Case Study. Telecom Research Laboratories, (Report No.7241) Telecom Australia, 1977.

This report describes an experimental telephone conferencing project conducted by Telecom and the Department of Veterans' Affairs in Melbourne during 1977.

The Telelink project employed conventional telephone systems to provide a "teleconferencing" or group communication facility between housebound veterans and war widows in Melbourne. The teleconference system could be used to link up to nine subscribers simultaneously. It could be used for either local or trunk calls.

This evaluation was based on interviews with the participants, and with several social welfare organizations with responsibilities for the aged and handicapped. The participants comprised two groups, one of six and the other of five persons, whose ages ranged from 50 to 88, who were socially isolated, or people with limited mobility.

The report concluded that telephone conferencing can serve some of communication needs of social welfare organizations, particularly in the provision of support services.

The main value of this trial is that it suggests that a telephone conferencing system such as Telelink could be used in a range of social service areas including those in education and health.

:teleconferencing :project evaluation :social issues

#102
ALLEN, Ian and CONBOY, Ian.
"The Newer Communication Technologies and Their Use in Disseminating Curriculum in Victorian Primary and Secondary Schools". Paper presented at the conference "Tertiary Education in the Age of Communication". Royal Melbourne Institute of Technology, June 29-July 1,1983.

The authors describe some of the newer communications technologies and suggests how these technologies might be distinguished from the older technologies. They then consider how some of the problems existing in the Victorian educational system might be solved or partly solved with the use of new communications technologies. Then there is a discussion of some of the trials using new communications technologies which have been undertaken in Victorian schools. And finally the authors discuss some of the issues which may confront the Victorian Department of Education when some of the newer communications technologies are introduced.

This paper is important because it illustrates how policy and planning can be developed as a result of a careful analysis of the situation, together with small-scale experimentation and evaluation.

:policy and planning :isolated children
:project evaluation :educational planning
:needs assessment

#103
APPALACHIAN EDUCATION SATELLITE PROJECT.
The Appalachian Education Satellite Project: Final Report. Lexington, Kentucky, 1976 (ED 125 595)

The first section of this report describes the objectives, project organization, and program of the Appalachian Education Satellite Project. The second section describes the resource coordinating centres and their seven missions: reading course development, career education course development for K-6 and 7-12, four-channel audio program development, television production and broadcasting, information systems, and evaluation.

Two documents are included in the appendix to the second section: one describes the four-channel audio component of the project, and the other provides samples of input and documents from the information systems project. The third section describes the operation and function of the five regional education service agencies which cooperated in the project. Project accomplishments are summarized in the fourth section, and possible future developments conclude the report.

While the particular solutions chosen by this project do not necessarily relate to the Australian situation, many of the problems faced by the project planners are relevant to Australian educational planners. The AESP planners were working in a sparsely settled region where transportation was difficult, and where there was a need for improved access to educational services by teachers and students.

:communications satellites :distance education :educational planning
:policy and planning :project evaluation :rural education
:needs assessment

#104
AUSTRALIAN SATELLITE USERS ASSOCIATION.
Satellite Access Policy. Proceedings of a policy development forum held at the National Library of Australia, Canberra, 28 October, 1981.

This policy development forum organized by the Australian Satellite Users Association (AUSAT), which was later to change its name to the Satellite and Telecommunications Users Association-Australia (SAT users), was organized to consider the rules of access to the Australian domestic communication satellite. Because AUSAT represented the interests of "small users"- largely non-profit organizations working in the public sector, the focus of the discussion was on the ability of "small users" to obtain access to the domestic communication satellite. Many AUSAT members feared that the needs and interests of "large users" would mean that "small users" would not gain access to the system.

Speakers at the forum included representatives of the Department of

Communications, Telecom, commercial communication organizations and politicians. Speakers also came from potential "small user" groups such as the Isolated Children's Parents' Association, the Library Association of Australia, health organizations and the Australian College of Education.

The forum concluded with the passing of a series of resolutions which were designed to guarantee "small user" access to the domestic communication satellite.

:communications satellites :policy and planning
:social issues :communications planning

#105
AUSTRALIAN BROADCASTING COMMISSION.
Media in the Classroom: The use of ABC radio and television for schools. Sydney, 1977.

This publication is a guide to the use of ABC educational broadcasts in schools. The first section, "Programs and Support Material" illustrates some of the reasons for using broadcasts, and then goes on to discuss some of the special features of sound and visual media. These include for radio: the stimulation of imagination, presentation of ideas, development of listening skills and language awareness. Television offers such features as: access to other places, an experiential or affective capacity, and popularity. There is also a discussion of the sources of program information, and support materials.

The following section, "Equipment and Usage" provides details on radio television and radiovision equipment, their use and maintenance, and on the recording of programs.

A section on "Broadcasts and School Resource Organization" covers issues such as the efficient management of school- recorded broadcast resources. This includes a discussion of the development of a resources policy which involves issues such as program classification and cataloguing, storage and retrieval, and access provisions. A discussion of school Resource Centres includes - state by state reports of school resource organizations.

There is a chapter on early childhood programs, which describes the aims and content of the ABC's major program series in radio and television for pre-school children. The final chapter presents actual case studies in which teachers comment on their uses of ABC schools broadcasts, emphasizing the stimulating effects which programs have on subsequent classroom activities.

:radio in education :educational technology
:resource guide :television in education

#106
AUSTRALIAN COLLEGE OF EDUCATION.
"The Potential Use of a Domestic Satellite Communications System for Education in Australia," Appendix to Unicorn: The Bulletin of the Australian College of Education, vol.6, no.3, (August, 1980), pp. 320-345.

This document contains summaries of papers presented at a seminar on the Australian domestic satellite, organized by the Australian College of Education. Participants at the seminar included educationalists and academics.

The report contains discussions of the planning of satellite communications, control and management of the Australian satellite project, and the educational applications of communication satellites from a number of different user perspectives. Overseas experiences with educational applications of communication satellites are also discussed.

The conclusions stress the need for co-ordinated planning, the development of programs for evaluating educational needs, and the development of programs for educating potential educational users in the efficient use of telecommunications systems. It is argued that in any educational planning, the satellite communication system should be seen as complementing and not replacing existing terrestrial telecommunications systems.

:communications satellites :educational planning
:communications planning :policy and planning

#107
AUSTRALIAN SCIENCE AND TECHNOLOGY COUNCIL.
Videotex in Australia: Interactive information services. A report to the Prime Minister by the Australian Science and Technology Council prepared by the Technological Change Committee. Canberra, Australian Government Publishing Service, August, 1983.

This important document recommends that the Government should examine ways to create a public access videotex service and that Telecom be invited to submit proposals for the establishment of such a service. The value of this document lies in its discussion of the issues within a public policy framework, and in the excellent summaries of experiences with videotex outside Australia.

A separate section of the report considers the educational and training applications of videotex systems. Issues such as the suitability of videotex for teaching, educational experiments with Prestel, computer literacy, educational administration and teaching the disadvantaged are considered.

And given the Government decision in October 1983 to proceed with a national videotex system which would be managed by Telecom, this document can be read as a guide to future developments.

:videotext
:communications planning
:telecommunications in education
:policy and planning

#108
BAIRD, Marcia. HUFFAKER, Shelly and OLGREN, Christine (compilers) Dial Access: A Way to Spread Your Message. University of Wisconsin - Extension, Centre for Interactive Instructional Programs (June, 1979).

The versatility of the telephone as a low-cost communications tool is demonstrated in this collection of papers, which surveys information and issues relating to Dial Access. Dial Access is a generic term for a process which uses telephone-based systems to provide specialized information to the community. The services range from the provision of library services to the distribution of highly technical data for the use of professionals.

Dial Access systems may incorporate various types of technical components such as cartridges, cassettes, multi-channelled consoles and audio tapes.

This report is useful for those with an interest in designing, planning, promoting or evaluating telephone-based information programmes.

:telephones in education
:educational technology
:project evaluation
:resource guide
:library automation

#109
BATES, A.W.
"Obstacles to the effective use of communication media in a learning system," in Aspects of Educational Technology vol. 8 Communication and Learning, (ed.) J. P. Baggaley, G. H. Jamieson, and Harry Marchant. Bath, Pitman (1975), pp.15-28.

There is strong evidence that in many cases, the new teaching media are under-used, and where they are used they frequently fail to achieve their potential. Some reasons for this are: lack of clear teaching objectives when a media system is set up; inappropriate organizational structures for the integration of the media and the curriculum; an ignorance of the problems and possible solutions in the use of media for teaching; and insufficient expenditure, usually recurrent, but in some cases capital as well. The two most serious of these are the lack of an appropriate organizational structure, and ignorance of the problems of using media.

Communication media will not achieve their potential if they are merely added as separate and extra components to an existing structure which already has its own internal dynamic. The graft will not take. New media require new methods of teaching, which in turn demand new organizational structures to support them. Also, there are a great many unknown or unsolved problems in using media for teaching, among which are: identifying the most appropriate teaching uses of various media, when they are used together, and identifying and solving the problems encountered by students in learning from the various media.

The lack of appropriate organizational structures and the difficulties in identifying media learning difficulties could be overcome by determined action by funding bodies. Organizational changes could be demanded as a precondition of capital or renewed current expenditure; and a much greater proportion of recurrent expenditure should be devoted to systematic monitoring, research and evaluation.

:educational planning :educational technology
:policy and planning

#110
BATES, A. W.
"Roles and characteristics of television and some implications for distance learning." Distance Education, vol.3, no.1,(1982), pp 28-50.

The Open University has a unique partnership with the BBC. The BBC produces television, radio and audio-cassette material in conjunction with Open University academic and other course design staff. Producers are full members of course teams. The government, through its grant to the university, pays the full cost of the BBC's services to the university. The BBC has set up a department (BBC/OUP) specifically to provide services to the Open University. In Autumn, 1981, a brand-new, five and a half million pound, purpose-built studio complex became operational on the university campus, and is managed by the BBC on the university's behalf. Currently, over 1,500 Open University television programmes are transmitted each year on the BBC's national television networks.

The university funds a small research group to investigate the use of audio-visual media in the university. The research group carries out studies of programme utilization across the 140 different courses, to assist with the planning and allocation of production and transmission resources. It also carries out more detailed research into individual programmes and course strategies for using television. More recently, the research group has been paying particular attention to how students learn from television. This paper explores some recent theory, and research developments on the role and character of television, and its impact on learning in distance education.

:distance education :television in education

:Open University :educational planning
:communications planning

#111
BATES, A.W.
"Survey of Student use of Broadcasting," Teaching At a Distance, no.5.,(March, 1976), pp.45-52.

This paper presents the results of a survey conducted in 1974 to evaluate the Open University's use of broadcasting. The survey, carried out by the university's Institute of Educational Technology aimed to determine viewing and listening figures for each of the university's courses, and to compare the figures for different transmission times. The results were to assist in the development and planning of future broadcasting and they are presented in this article.

Survey findings revealed the following trends:

- The average student watched about two-thirds of the television programmes and heard about half the radio programmes for the courses for which he was registered.
- There was much individual variation in viewing behaviour, though this variation is mild compared with variations in listening behaviour.
- Most students find some value in the television programmes, but are more divided as to the value of radio programmes.
- Television viewing figures are higher, and much more compact than radio. There is less variation within or between faculties.

The author suggests that these findings reflect, to some extent, individual course teams' commitment to television or radio. The article concludes by discussing the advantages and disadvantages of various broadcast times, and the possibility of providing Study Centres as back-up facilities.

:television in education :Open University
:project evaluation :distance education
:radio in education

#112
BATES, A.W.
"Whatever happened to radio at the Open University?" Educational Broadcasting International, vol. 17, no.3 (September, 1979), pp.119-123.

The under-use of radio as an instructional medium by the Open University in England, is discussed, and the results of an evaluation of student use of educational radio and television are presented, and assessed. The view expressed here is that the poor response to educational radio is because radio programmes have not been presented in a way that might encourage any kind of activity or interaction, and that most radio programmes were peripheral to the course, unimaginative, and academic, and presented as additions to course units rather than as integral parts of them. The fixed transmission times are also considered a constraint on the value of radio programmes in education at the Open University - where many of the students require flexibility in learning times.

The article concludes by suggesting that audio-cassettes may prove more valuable than broadcast radio at the Open University.

:Open University
:educational planning
:audio in education
:radio in education
:project evaluation

#113
BOND, Donald S.
The Opportunity for Television Program Distribution in Australia Using Earth Satellites. Sydney, Television Corporation Limited, 1977.

This report was prepared for Television Corporation (which later became Publishing and Broadcasting) and was presented to the government. As a consequence the government initiated a series of inquiries which led to the establishment of the Australian domestic communication satellite system. The report presents a discussion of the potential of satellite communications for improving the distribution of television services in Australia.

Following a discussion of satellite technology and its potential benefits for Australian communications, some detailed case studies of the principal domestic communications satellite systems in the U.S.A., and Canada are presented. Consideration is given to costs of an Australian satellite system, and a number of recommendations are made. These are to evaluate the author's plans for a nationwide television network distribution service using communication satellites; to explore legal, regulatory and policy issues; to seek a policy statement from the Government for guidance in national social and economic issues; to examine financing and ownership arrangements; and to survey the needs of other interested bodies (e.g., educators, health-care workers, other telecommunications organizations and overseas Governments).

:communications satellites
:communications planning
:policy and planning

#114
BROWN, A.J.
Education, Libraries and the New Technologies. South Australia: Department of Further Education, 1981.

This is a report of an overseas study tour of England, U.S.A., and Canada undertaken during October - December 1980 to investigate current development and practices in:

- Educational communications
- Educational technology
- Management and utilization of learning resource centres and independent study programmes in post-secondary education
- Library automation and network development.

The author discusses the present state of development and actual applications of new technologies in education and libraries, including computer-based education, instructional television, the video disc, teletext and videotext, and satellite communications. The report includes specific recommendations for educational uses of communications technology in Australia.

:library automation :educational technology
:educational planning :video in education
:communication satellites :computers in education
:learning materials

#115
BROWN, Anthony J., and KENWORTHY, Brian R.
New Forms of Delivery for TAFE Course Provision South Australia, South Australia, Department of Technical & Further Education, Educational Resources Branch, April, 1983.

This booklet presents a survey of resources in educational technology that can be used in TAFE courses. A brief introduction presents a definition of educational technology as "the design, application, evaluation and development of systems, methods and materials to improve the process of human learning". This definition is then expanded, to refer to theory, practice and development of instructional systems (including courses and units of study), instructional methods (including staff training and development programmes), and instructional media and materials.

A background to the use of alternative forms of delivery for TAFE courses, is followed by details of the delivery systems themselves. These are:

- Individualised or self-paced learning

- Resource-based learning

- Computer-based education

- Instructional television

- Mass media

- High Technology Applications
  - Personal teaching computers
  - Videodisc
  - Teletext/viewdata
  - Cable television
  - Satellite communications

- Intermediate Technology Applications
  - In-house production of resource materials
  - Community radio

:educational technology
:television in education
:cable television
:resource guide
:video in education
:videotext

#116
BUTLER, A.
"Now the Unions are in FM Too," TTUV News, vol.15, no.3, (29th April, 1981), pp.29-30.

This article describes the role of public broadcasting in providing alternative radio programmes and catering for special community needs. The Melbourne based FM Station 3RRR-FM is discussed as an example of one public broadcasting station which reflects the interests of teacher unions and other sections of the community and provides a link between education, the arts, and media. The point is made that this radio station demonstrates an increasing awareness of the role of the media in society, and of the ways in which unions can interact with the electronic media.

:public radio
:radio in education
:social issues

#117
COLDEWAY, D.O., and SPENCER, R.E.
"Keller's Personalized System of Instruction: The search for a basic distance learning paradigm," Distance Education, vol.3, no.1, (1982) pp. 51-71.

This paper presents research results and arguments which support the use of Keller's Personalized System of Instruction as a basic paradigm for distance learning. A study connected with PSI at Athabasca University is reported and discussed. A list of advantages and disadvantages of PSI as a basic paradigm for distance learning is also presented and discussed. The report concludes by suggesting that a paradigm for distance learning would facilitate communication on distance learning activity and that PSI would provide a basic paradigm for distance learning while still allowing for educational variations within distance learning to occur and develop.

:distance education :audio-tutorials
:educational technology

#118
CONBOY, Ian.
Distance Education of Nursing Personnel: An evaluation of the Broken Hill distance education learning package. Melbourne: College of Nursing, Australia, May, 1983.

This evaluation report discusses a field trial of a seminar package which was conducted in Broken Hill in March, 1983. The seminar package was designed to aid in the professional development of nurses, many of whom work in relatively isolated areas where there is not ready access to regular continuing education programs. The package was designed to be self-contained so that it could be distributed and used throughout Australia. It was felt that this package and others which might follow could reduce the feeling of isolation experienced by nurses working in remote locations.

The package tested in Broken Hill was concerned with the management of incontinence in the elderly. It contained detailed instructions for the seminar leader, a series of videotapes, learning guides for the participants, documentation of several case studies which were to be analysed during workshop sessions, a pretest and post-test and detailed instructions for arranging a teleconference with several experts located in Melbourne.

The evaluation report discusses the responses of the participants in the field trial and makes a series of recommendations for revision of the package as well as for the form and content of future packages.

This small-scale project is interesting because it shows how much can be done to provide continuing education to groups in isolated areas with existing communication technologies. Educational innovation does not require the development of complex new communication technologies.

:project evaluation :distance education
:nurse education :teleconferencing
:video in education :learning materials

:2

#119
CONBOY, Ian.
Survey of the Educational Access Television Project. Melbourne, Education Department of Victoria, Educational Technology Unit and Audio Visual Resources Branch, December 1981.

This report evaluates the responses of schools which took part in the Educational Access Television (E.A.T) project. The E.A.T Project is designed to provide improved accessibility and distribution of educational film and videotape for Victorian schools. This is done by using the transmission facilities of Channel 7, Melbourne, and a number of regional television networks throughout Victoria to broadcast educational materials to schools on selected days. These may then be recorded on videotape in individual schools, thus enabling greater flexibility in the use of audio-visual resources in the classroom.

Seven tables in the report illustrate the perceptions of the usefulness of the E.A.T. project, preferred topics and distribution days for programmes, as well as breakdowns of survey sample composition, response rate, television channels used, and main sources of information about E.A.T. as obtained by schools.

The main value of this report lies in the presentation of a method for assessing the distribution and uses of educational film and television materials in schools.

:television in education
:educational technology
:video in education
:educational planning
:project evaluation

#120
CONBOY, Ian.
Teleconferencing in Education: Evaluation of the Charlton Pilot Project: A report prepared for the Victorian Country Education Project. Melbourne, Education Department of Victoria, Audio Visual Resources Branch, October, 1982.

This report is an evaluation of a pilot project in which a teleconference system was used in seven Victorian country schools, to teach Higher School Certificate students Art, English, Literature and Australian History. One of the objectives of this project was to promote the use of two-way audio contact between schools which are relatively isolated from each other, and from the main educational centres.

The project focused on country schools with small classes and with some correspondence students, and allowed the schools themselves to control the use of the teleconferencing equipment. It provided an opportunity to investigate the interaction between the setting, the participants and the equipment.

Equipment used, comprised modified telephone systems designed to allow a small group of people in a single location to communicate with another group, or with a single external participant.

The project was evaluated by means of participant reports. The main conclusions pointed to the success of this kind of project in enabling access between country schools, and between country schools and external sources of expertise. Also, it was felt that the project had contributed to the in-service education of the teachers involved. The report includes a section on the economic aspects of the teleconferencing system.

:distance education
:teleconferencing
:project evaluation
:educational planning
:rural education
:telephones in education
:economic analysis

#121
CONFERENCE OF DIRECTORS-GENERAL OF EDUCATION.
Report of the Working Party on the Educational Use of a Communications Satellite. Canberra, May, 1981.

The Working Party on the Educational Use of a Communications Satellites, was created by the Conference of Directors-General of Education in September 1979.

This report sets out the current status, and projected development of trials to effectively assess the potential educational usage of telecommunications technology. One of the most important statements made in this report is that educational uses of communications satellites should not be viewed in isolation from other existing communications systems. It is also argued that:

> ...the important issue is not that of how education can use the satellite, but, rather, the needs of education which can be better served by the range of existing and emerging telecommunications technologies.

The report summarizes current and completed activities from around Australia, and also the needs identified, and the issues raised in the Working Party's initial investigations. Of particular note is the opinion that trials should not aim at resolving technical problems (i.e., whether or not a particular system will work) - but, rather problems of educational effectiveness, and other socio-political and economic problems. The emphasis here is on providing information about, and awareness of the potential of communications technology for educational purposes. The report discusses liaison and co-operation with other relevant organizations.

An Appendix states that the educational potential of a national communications satellite system is dependent upon: costs (relative to alternative services); the awareness of educators of possible new

application of communications technologies; time factors in satellite commissioning; and, issues such as ownership, management and control of the communications satellite system.

The remaining Appendices cover completed and continuing developments in educational uses of communications technology in Australia.

:educational planning
:telecommunications in education
:communications satellites
:communications planning

#122
CONLON, Keith and MULLINS, Gerry.
"Who Listens to Educational Public Radio?" Studies in Continuing Education, no.3, (1979), pp.78-97.

This article reports on a pilot study conducted by the Australian Education Research and Development Committee, aimed at developing audience survey methods for public radio, and providing preliminary data about the characteristics of the audience of an Adelaide-based radio station: 5UV.

In addition to developing audience survey methods in general, and for 5UV, the study aimed at producing actual survey results which could be used to make programming and publicity decisions at 5UV.

The article presents details of radio station 5UV staffing, finance and programming, and then goes on to discuss the survey project. A background to the project is followed by details of survey methods, these being questionnaire, and suburban sampling. The results include a profile of 5UV listeners, their reading habits and other leisure activities, and a discussion of why it is that people don't listen to 5UV.

It is argued that the pilot study demonstrated that an objective, efficient and reasonably low-cost survey could be conducted from within a public station using station personnel and selected volunteers.

:public radio
:communications planning
:project evaluation
:radio in education

#123
COWLAN, B., and FOOTE, D.
A Case Study of the ATS-6 Health, Education and Telecommunications Projects. Washington D.C., Agency for International Development, 1975. (ED 118 149).

Six experiments in health and education were conducted in rural areas of the continental United States and Alaska during 1974-75, using

the National Aeronautics and Space Administration's Applications Technology Satellite-6. The experimental activities included courses designed for elementary, junior high, high school, and college; continuing professional education; medical consultations and health care support; administrative interaction; and adult enrichment. The study concluded that:

- systems planning and program content should be based on user needs;
- effective field personnel require staff support, proper training, and multi-source feedback;
- project objectives, personnel requirements, and inter-disciplinary cooperation should be initial considerations;
- supplementary activities and materials play a significant role;
- educational effectiveness, target audience, and subject matter are primary program elements;
- time and money may be larger considerations than anticipated;
- interaction between the studio and remote sites needs to be carefully structured and adopted to the specific situation.

This study is important because it is one of the few independent examinations of the ATS-6 experiments and demonstrations. (Much of the other material generated by this project was produced by the experimenters and demonstrators.)

:communications satellites
:distance education
:telecommunications in education
:rural education
:policy and planning
:television in education

#124
DANIEL, J.S.
"Educational Experiments with the Communications Technology Satellite: A memo from evaluators to planners." Paper presented at the NATO Conference on Evaluation and Research in Interactive Telecommunications Systems - Bergamo, Italy, 1977. (ED 163 962).

This paper reports on a series of experiments which were being conducted in Canada using the Communications Technology Satellite. The description of these experiments reveals a diversity not previously encountered in educational applications of satellite systems.

In evaluating these experiments, the authors adopted Stufflebeam's Context-Input-Process-Product model in order to investigate the wider problem of institutional assimilation of new communications technology, as well as issues of instructional effectiveness. To date the project has shown that horizontal constraints were more severe than experimenters had expected and that multi-point conferencing is very sensitive to technical quality. Although some of the experiments were very short, the project has demonstrated that satellite

communications have applications in education which go beyond the classical telelecture.

Principal recommendations for educational planners were:

Focus on real needs and primary objectives and do not mix technical experiments with educational objectives.

A small management team with no other responsibilities is better than a larger team with dual loyalties.

Train participants and share information so that everyone knows what is going on and can act accordingly.

Involve experimenters with the evaluation.

This is an important document for anyone proposing an experiment, demonstration or project evaluation.

:telecommunications in education
:communications satellites
:distance education
:educational planning
:project evaluation

#125
DAVIES, N.G and GILLAM, J.A.
Potential Use of the Australian Satellite Communications System for School of the Air and Enhanced Educational Services. Report prepared for Commonwealth/State Advisory Committee on the Educational Use of Communications Technology and the Department of Communications, Canberra, March, 1983.

This is a working report which considers how the needs of the Schools of the Air might be met with the use of the Australian domestic communication satellite system. The report discusses a range of educational applications and technical options.

The report considers the requirements of Schools of the Air, and develops several alternative communications models to meet their requirements. Recommendations are that a 12-watt transponder be leased to provide all necessary channels for teacher-to-student communication, and that student-to-teacher links should be provided by a combination of satellite, telephone and HF systems. This report is useful because it presents technical, financial and various communications system models in a way which allows educational planners to assess the various options.

:communications satellites
:isolated children
:communications planning
:economic analysis
:distance education
:educational planning
:needs assessment
:School of the Air

#126
DEACON, Chris, ed.
DOMSAT 1979: A Communications satellite for Australia - who will benefit? Papers and Proceedings of the First National Domestic Satellite Conference-February 1979. Canberra, A.N.U Centre for Continuing Education, 1979.

This is a collection of papers from a conference on the Commonwealth Government's proposed domestic satellite system. It involved representatives from government departments, community groups, academic institutions and some international satellite organizations, and provided an opportunity for debate and interaction between participants with widely differing points of view.

Papers range over a diverse number of topics, including the uses of satellites for educational, library, scientific and other purposes, in rural and isolated areas, socio-economic impact, experiences of satellite users. There were also contributions from various community organizations. Gosewinckel's introductory overview provides an excellent technical background in communications satellites, and their benefits.

Two papers on the educational uses of communications satellites are presented. White, (pp.231 - 249) discusses the lessons which Australians can learn from the Educational Satellite Communications Demonstration which was a project carried out in the United States during 1971-1975. It was designed to assess the use of communications satellites for the provision of educational services to remote and isolated areas. In an informal presentation White (pp.326-332) outlined some of the tasks which education planners should consider in relation to the transfer of existing educational services to a new communication system, and the definition of experiments and demonstrations which will help to specify new services which might be developed.

:communications satellites :communications planning
:educational planning :needs assessment

#127
DIASINOS, M and KUHL, D.H.
Evaluation of Learning Materials: A bibliography. South Australia, Department of Technical and Further Education, 1977.

This bibliography provides a comprehensive coverage of the evaluation of learning materials, particularly as it applies to technical and further education. International references were obtained by searching the major educational indexes. This document should be useful for teachers, educational administrators and course designers.

:learning materials :annotated bibliography
:resource guide

#128
DRAKE, Darryl.
"Seventext: ATN-7's Foray Into Information Technology," In: Technological Change: Impact of Information Technology, Canberra, Australian Government Publishing Service, 1982. pp.115-123.

Drake examines the development and applications of teletext - an economical and accessible form of data transmission using broadcast television. He discusses the teletext service provided by ATN Channel 7, Sydney, in terms of its aims, application and costs. A brief survey of other teletext services, both overseas and in Australia, is made, and some discussion of future development is included. Drake concludes that although the impact of teletext has not been great, largely due to cost factors, there is a high level of consumer interest in this service.

:teletext in education :economic analysis

#129
DUKE, Chris.
The Impact of Modern Communication Technology in Australia. Canberra, A.N.U. Centre for Continuing Education, 1979.

This is a sociological study which explores issues such as the meaning of "modern communication technology", technological determinism, technological change, and the role of communications in forming Australia's identity.

Duke believes that communication models should be discussed in the context of the basic demographic, and physical structures of a particular country. In a chapter devoted to the role of the media in Australia, he advances the hypothesis that media present an essentially "middle-class" view of the world, and that there is a

> ...growing recognition of the social function of the mass media in integrating and underpinning a homogeneous middle-class society. (p.4)

In discussing the role of Telecom, Duke argues that much technological planning is motivated more by concern for unemployment, and by political considerations rather than by a socially-oriented problem centred approach.

In a chapter on communication satellites, Duke argues that there is a need to demystify satellite technology and increase public awareness in order to foster careful social planning. He argues that communications satellites should be used in two-way interactive or

multi-directional modes. Otherwise, he maintains, satellite technology can only serve to maintain the hegemony of central controlling bodies rather than contribute towards cultural diversity. He states, for example, with respect to remote Aboriginal communities; that there is a probability that communications satellite technology would become a tool for assimilation rather than a means of fostering self-determination.

The report concludes with the proposition that Australian communication development is constrained by bureaucratic inflexibility and legislative systems which limit choice and decision-making in planning for new communications technologies.

:communications planning
:policy and planning
:social issues
:communications satellites

#130
FEDERATION OF ROCKY MOUNTAIN STATES.
Satellite Technology Demonstration: Executive Report. Denver, Colorado, 1975. (ED 115 260)

The Federation of Rocky Mountain States and the Satellite Technology Demonstration project (STD) have collaborated in an effort to provide low-cost information delivery to rural areas of the Rockies. Though the goals and the financial support of this joint effort were initially confused, sites were selected, the communications technology refined, and services stabilized. New satellite technology made quality reception possible with low-cost ground receivers, and the technical performance of the system in its initial years was good.

"Time Out" - a career education program for junior high school students, and "Footprint" - a series of community-oriented programs - enjoyed high audience response, and substantial gains in student knowledge were recorded. Programs were enhanced by supplementary publications and audiovisual aids, and the system provided an interactive mode whereby students could ask questions and make comments about the programs. A brief review of the program's financial support is included.

This report is important because the STD led to a much greater awareness among educators of the possibilities of satellite-based communications. While the project did not continue past the demonstration phase, the most tangible relic of this large project was the formation of the Public Service Satellite Consortium - a non-profit organization oriented to the social service application of satellite communications.

:communications satellites
:telecommunications in education
:distance education
:project evaluation
:educational planning
:television in education
:rural education
:economic analysis

:policy and planning

#131
FILEP, R.T., and JOHANSEN, P.A.
A Synthesis of the Final Reports and Evaluations of the ATS-6 Satellite Experiments in Health, Education and Telecommunications. Washington, D.C., Agency for International Development, 1977. (ED 140 783)

Because the education and health experiments which use the ATS-6 satellite were on such a large scale and because they have been the focus of so much discussions, this overview document is a useful addition to the literature.

This document provides a synthesis of the final project reports and project evaluations of a series of health and education satellite experiments designed to explore the use of satellite technology in the delivery of social services. Each summary in this paper outlines the objectives, procedures, instructional or medical content, and the overall results of the project.

A review of the external evaluation provides information regarding areas assessed, such as achievement, and attitude toward the approach by users. An overview section analyzes the value of the experiments as a group, with special attention to their role as precursors of a number of activities started in order to exploit satellites in the delivery of social services. Geographic areas covered include the Appalachian Region, the Rocky Mountain Region, and the Alaska Region.

:project evaluation
:distance education
:policy and planning
:telecommunications in education
:communications satellites
:rural education
:television in education

#132
FILEP, Robert T., WEDEMEYER, Dan J., and BALLARD, Joan P.
Communication Satellites and Social Services: Focus on Users and Evaluations- An Annotated Bibliography. Arnenberg School of Communications/Learning Systems Centre, University of Southern California, 1975.

This annotated bibliography reviews books, reports and papers relating tc social applications, experiments and evaluations of communication satellites and their potential for the delivery of social services.

The aim is to provide communication and educational planners with a useful survey of actual experiments, policies and case studies of satellite users inside and outside the United States. The guide includes a list of key words for ease in locating items, and a selected general bibliography.

In developing the guide, the compilers have been aware that communication satellites should be planned in conjunction with existing alternative technologies, and that a situation should not be evaluated specifically for satellite applications. Rather, satellites should be seen as complementing other systems for a particular social or community need. Thus, needs evaluation, costing and careful planning and fostering of awareness are seen as the major areas of communications development.

:communications satellites
:educational planning
:communications planning
:annotated bibliography
:telecommunications in education
:social issues

#133
FLINCK, R.
Correspondence Education Combined with Systematic Telephone Tutoring. University of Lund, Department of Education, 1978. (ED 168 535)

This study focused on the improvement of traditional two-way communication processes in correspondence education through variations on the uses of postal communications, reinforcing the feedback sent by mail with systematic telephone calls, and combinations of mail and face-to-face contacts; the primary focus was correspondence education combined with telephone tutoring.

A literature review covers correspondence education, two-way communication, and the telephone as an instructional aid. The experimental design of the study involved two groups of randomly distributed correspondence students. The experimental group received telephone tutoring in addition to conventional feedback, while the other received only written feedback by mail. Courses included were introductory French and basic economics - both intended for adult learners.

Results indicated that students who received telephone tutoring reacted to it favourably; however, no difference was found between the two groups in achievement, amount of study time, or feelings of isolation. Telephone tutoring proved to be of a greater advantage to those students studying a foreign language than to students studying one of the social sciences.

:telephone in education
:distance education
:literature review
:project evaluation

#134
FLINCK, R.
The Telephone as an Instructional Aid in Distance Education: A survey of the literature. University of Lund, Department of Education, 1975. (ED 112 942)

Literature on four methods to effectively use the telephone to reinforce two-way communication in instruction is comprehensively reviewed. A study conducted in Sweden using teleteaching, telelecturing, dial-access, and teletutoring is briefly discussed. A bibliography of 93 items is included. The literature reviewed includes items from Europe as well as North America.

:telephone in education :literature review
:distance education

#135
FOWLER, Clifford F.
The Roctapus Closed Circuit Television Program. Queensland Department of Education. Priority Country Area Program Evaluation Series, Report no.? ,May 1979.

The Roctapus program is a scheme which provides country schools with specially produced video T.V., programs aimed at widening the horizons of isolated children, and of interest to a range of age levels, mainly middle-primary to lower-secondary grades.

Roctapus (Really Outstanding Colour Television About Practically Unlimited Subjects) provides a magazine-style program covering a wide range of topics. Each individual program deals with the "unwritten curriculum" and comprises a number of short segments linked by a compere in such a way that teachers can structure educational activities around particular segments. They are intended to encourage interaction between the Roctapus team and the audience, by basing program materials on ideas suggested by the participating schools. Programs are distributed fortnightly on video cassettes and all schools in the Priority Country Areas Project are supplied with video cassette recorders, monitors, and a maintenance service.

This report presents the findings of a five week evaluation study aimed at supplying information, on, and demonstrating the value of the Roctapus program for the education of country children. It was also designed to provide feedback to the Roctapus personnel so that the program could be improved.

The evaluation of Roctapus was carried out with a combination of surveys, telephone interviews, visits, discussions, face-to-face interviews, documentation analysis, and a study of selected Roctapus tapes.

The report discusses the Roctapus evaluation in terms of the purposes of Roctapus, and how it answers questions relating to educational disadvantage. It also considers the objectives of Roctapus in the context of the rural environment and the characteristics of country schools. The actual production of Roctapus programs is described, and there is a summary of responses to Roctapus, made by different sections of the community i.e., teachers, students, administrators.

Finally, the strengths and weaknesses of Roctapus are presented by including statements from both advocates and adversaries of the scheme.

The researchers found that respondents were generally favourable to the program although the responses were more favourable from secondary schools than from primary schools.

:television in education
:distance education
:rural education
:isolated children
:Roctapus
:video in education

#136
FOXALL, Anna.
"Radiovision: A survey and discussion," Programmed Learning and Educational Technology, vol.9, (November 1972), pp.300-312.

This is a research-based article which examines the history and applications - both actual and potential - of radiovision. According to the author radiovision is a relatively little-known educational media system which combines sound broadcasting with specifically designed filmstrips. The audience listens to the sound broadcast and watches the filmstrip at the same time.

Radiovision is seen as cheap and flexible and has been used successfully in many countries e.g., Australia, Africa and Europe. Currently, it is used for the 7-18 age group and, in this article, it is suggested that the use of radiovision be extended and integrated with other forms of educational media such as sound/vision programs and published materials.

:educational technology
:resource guide
:radio in education

#137
FREEMAN, Andrew.
"The Line to Learning," Quest no.28 (October 1979), p.10.

This paper outlines the benefits of using teleconferencing for student research projects.

:telephone in education
:teleconferencing

#138
FREEMAN, Andrew.
"Communication Across the Curriculum - Implementing this approach using conference telephones."Idiom, vol.15, no.1, (Summer, 1980), pp.14-16.

The use of conference telephones in enabling students to interact with a variety of people is advocated in this article. Freeman argues that the telephone in education can provide the impetus for an effective "Communication Across the Curriculum" - a philosophy aimed at improving the communicative competence of students by involving them in interaction and decision-making in real life situations.

:telephone in education

#139
GALLAGHER, M., and MARSHALL, J.
"Broadcasting and the need for replay facilities at the Open University," British Journal of Educational Technology, vol.6, no.3, (October, 1975), pp.35-45.

This article describes and evaluates an Open University project on the use of video cassette recorders to record and playback educational broadcasts. The authors outline the importance of broadcasting in Open University courses, and indicate the incompatibility of fixed programme scheduling with the growth of the University.

The video cassette recorder project was funded by the Open University and initiated in 1974 as a result of the increasing awareness of a need for greater flexibility in the use of educational broadcast materials. An initial attempt at setting up recording/playback facilities using a super 8 mm film-cassette system had been made, but was terminated. The authors state that, whilst this system was under-used and expensive, the decision to drop it was based on short-term economic rather than on long term educational considerations.

In the VCR project, six study centres were selected to represent various communities and levels of student activity. A VCR system was implemented and monitored with the following objectives:

- to test the practicability of VCR use by students in study centres,
- to establish the most effective organization for a VCR replay system,
- to establish the best available models to suit the Open University's needs,
- to test the current level of student demand for a television replay system.

With these aims in mind, the feasibility of a student operated system compared with one operated by staff of the host institution is discussed. (Some centres also had a cassette library service.)

The article examines the equipment which was used, and the method of evaluation, and concludes with a discussion of the results and their implications for a full implementation of a VCR replay system.

One important point which emerges is the need for information to be provided to users and potential users. In this project, the scheme was introduced by means of letters, introductory meetings, demonstrations and written instructions.

The evaluation was carried out by monitoring system usage (i.e., number of programmes recorded, number played back, number of students using the system and the range of courses), monitoring of equipment (e.g., reliability, ease of operation) and by questionnaires, background information, telephone and face-to-face interviews, occasional visits by Open University Staff to study centres, a log-book and service and maintenance records.

It was found that with 17 - 20 per cent usage and an average of two students per viewing, the response was enthusiastic. The major factors to consider, the authors claim, are the overall reliability of equipment and the briefing of participants so that they are familiar with the operation of the equipment.

The most efficient system, from the points of view of both students and the University, was found to be a centrally-based cassette library service. The limitations of alternative systems are discussed, and the economic justification of using currently available technology is mentioned.

:project evaluation :television in education
:educational planning :video in education

#140
GALVIN, Marilyn and MALMBORG, Lee.
A Pilot Project: Teaching with Video Programs. Queensland Department of Education, Production Services Branch (March 1982).

This report describes a project which was designed to develop appropriate teaching methodologies, and equipment selection for use with two-way audio communication systems. The project was designed to assist in the implementation of a Loan Video Scheme, a year-long program aimed at providing students in remote areas (i.e., outside normal T.V., transmission areas) with access to video facilities.

In this particular project, trials were conducted which simulated a School of the Air situation, in which students were effectively "isolated," both visually and acoustically from one another using screens and head-sets. Lessons were prepared, based on ABC Television Programs.

Trials took place at Newmarket State School, in Brisbane, using head-

sets and a Telecom switchboard system to provide two-way teacher/pupil interaction. Those pupils who took part in these trials were selected on the basis of average or above-average ability, in order to represent those School of the Air children who would be eligible for an operational scheme.

The report contains sections on project participants, teacher/learning environment, equipment details, trial procedures and lesson preparation, with the greater part comprising lesson descriptions.

The conclusions point to the need for careful planning to develop appropriate teaching strategies which match lessons to the specific delivery medium being used, and with regard to the special needs of students in remote learning situations. It also suggests that teachers should be aware of student/teacher feedback, and factors such as preparation time, the need for supporting materials, and duration of lessons when developing teaching methods which make use of the new communications technologies.

:distance education
:educational technology
:project evaluation
:Home Loan Video
:telephone in education
:rural education

#141
GIBBONS, Jennifer.
Telecare Telelink: A study of telephone and telecommunication services to care for elderly and disabled people in a domiciliary setting. Melbourne, Association for the Blind, Social Work Section, 1982.

This report surveys the actual and potential uses of two telephone-based services: Telecare and Telelink.

Telecare refers to a telephone reassurance programme designed and developed in America to provide social welfare services by telephone to the sick, the elderly and those generally lacking in social and/or physical mobility. Calls made through Telecare range from three minute "checkup" calls, to longer, sociable calls, and aim to provide a regular mode of contact with the recipients of the service.

Telelink, similarly, is a telephone-based communication system, but is aimed more towards setting up groups of participants in order to establish emotionally supportive relationships and to air mutual problems. This type of system is often referred to as teleconferencing and has a wide range of applications in education, health and industry as well as in social welfare.

The report describes both these services and discusses their benefits and applications as well as formal procedures for operating them. There is a section on a suggested Telecare Programme format for use in Australia, and examples of applications in the United States.

Appendices include various forms, procedures and instructions for using these services.

:telephone in education
:literature review
:social services
:teleconferencing

#142
GILBERT, Rod
"Magazine Television for Isolated Children," Journal School Library Association of Queensland, vol.12, no.1, (November, 1979), pp.5-7.

This article describes the history of the Queensland Priority Country Areas Schools Program, and it's magazine style television project distributed to children in isolated areas (Roctapus). It outlines the particular educational needs of isolated children, and discusses the aims and objectives of the Roctapus Program in fulfilling these needs.

:needs assessment
:video in education
:television in education
:rural education
:Roctapus

#143
GILLAM, J. A.
Infosat Services: Preliminary analysis. Canberra, National Library of Australia, 1980.

This document outlines the possibilities for the direct broadcasting via satellite of library-based audio-visual material (INFOSAT). The National Library of Australia considers that a direct broadcasting satellite (DBS) would be useful for the library distribution of informational films to schools, academic institutions, homesteads, and teaching hospitals throughout Australia, and of archival sound material to radio stations.

The main issues raised in this report are: whether the proposed domestic satellite system design would allow the DBS distribution of informational films , and whether such a service would be economically feasible within the tariff structure, set up by any national satellite authority. It is concluded that there might be some problems in relation to the geographical coverage provided by the four transponders in each satellite.

The section on the INFOSAT video service suggests that the satellite distribution of informational films should be used to supplement rather than replace existing terrestrial services.

The value of this report lies in its descriptions of existing library services, and their potential for transferral to a new communications

system. There is also a brief bibliographic guide to documents on satellite systems, which are held in the National Library.

:educational technology
:library automation
:communications satellites
:needs assessment

#144
GILLAM, J. A., and HAZELWOOD, G.
"LI3SAT: Library Satellite Interconnection Project," L.A.S.I.E., vol.12, nos. 2-3, (March, 1982), pp. 18-27.

The particular communication needs of Australian libraries are outlined (i.e., sharing of bibliographic data, transmission of documents, professional consultation) in the context of the development of the Australian domestic communications satellite system. A detailed discussion is then made of the affordability of new telecommunications technology.

The advantages of teleconferencing are presented in terms of its suitability for Australian library needs. The costs of equipment and telecommunications access is also discussed. The American Library Association teleconferencing project is also described.

Finally, a proposal for the satellite interconnection of Australian libraries is presented in terms of equipment configurations and management plans. The authors' concluding view is that satellite transmission would be favoured over terrestrial telecomunications systems because of its capacity for simultaneously delivering audio and video signals to a number of geographically dispersed centres. They emphasize the versatility of a satellite network as a general purpose communications facility which should not be created as another self-contained network, but rather, should be integrated into other existing networks.

:communications satellite
:needs assessment
:library automation
:communications planning

#145
GOSLING, G. W. H.
Telecommunications in Education: A Report Commissioned by the Australian Post Office on Uses and Planned Uses by Australian Educators of Telecommunications Facilities. Hawthorn, Australian Council for Educational Research ,1972.

The objective of this study, commissioned by the Australian Post Office, is to identify the educational communications needs in all States and Territories, in terms of the types of services, their qualities and locations. The report examines the current demands, and the future potential for telecommunications facilities for

educational purposes.

The report considers the possible use of existing Post Office telecommunications networks, for providing services to education and educational administration. The research method comprised a literature search, personal visits to appropriate authorities and manufacturers, a questionnaire, liaison with education departments, and a series of seminars.

The report found that the area offering the greatest potential for future development was the provision of remote teaching facilities using telelectures, with loud-speaking telephones. It suggests that this type of facility would have a major role in the education and in-service training of teachers in country areas. It also believes that the potential of such a system can be seen by having a system in actual operation, and that the value of an interactive mode needs to be demonstrated.

In conclusion, the report found an apparent lack of planning for the use of telecommunications facilities for education, particularly when compared with overseas. There was a low level of demand and interest among educators. Possible reasons for these finding are proposed, these being:

- the competition with existing conventional communications facilities available - such as slides, films, overhead projectors, etc.
- previous experience of new technologies has led to disappointment due to: difficulty of operation, unreliability, restricted availability of software.
- financial considerations.

In the light of these findings the report makes recommendations to the Australian Post Office. These indicate the need for co-operative research with education departments, appropriate liaison and information measures and further consideration of cost issues.

:telecommunications in education :needs assessment
:communications planning

#146
GOUGH, J. E., GARNER, B. J., and DAY, R. K. (eds).
Education for the Eighties: The Impact of the New Communications Technology. Waurn Ponds, Deakin University Press, 1981.

This collection of papers comprises the proceedings of a conference held at Deakin University in 1981. The conference was designed to promote and encourage the effective use of satellite communications for educational purposes.

The papers cover areas such as new technology, studies of overseas

systems, policy issues and the social and community aspects of satellite technology. The seven papers dealing with educational matters include policy and planning, tele-education in Western Canada, distance teaching at the University of the South Pacific, and new technologies.

Daniel, looks at the role of experimentation in the educational use of telecommunications technology, and examines the gap between these experiments and the actual operation of a satellite system. And Albertson discusses the need for a new image of tele-education in Australia, and the need for a new attitude towards technology-based innovations.

Overall, the report highlights the conference aims, which recognize the need for potential users of new telecommunications technology to identify and articulate their needs and interests so that they might contribute towards the efficient use of satellites for educational purposes.

:communications satellites
:communications planning
:telecommunications in education
:educational technology
:needs assessment

#147
GOUGH, J.E., GARNER, B. J., and DAY, R. K.
"Policy Issues in Planning for Distance Education Using a Domestic Communications Satellite," Distance Education, vol.2, no.1., (March, 1981), pp. 23-38.

Australia's decision to have its own domestic satellite system raises many policy and practical issues. These issues should be resolved before the system becomes operational. The considerations raised in this paper are primarily concerned with the use of satellites in distance education.

The more important issues considered include:

- shaping communication policy and practice with reference to technological development, market forces and public policy;
- reserving broadcast capacity for educational (non-commercial) use and guaranteeing continuing access to institutions investing in the system;
- determining the educational needs of the consumer, selecting educational uses appropriate to satellite transmission and identifying criteria for benefit evaluation and associated cost parameters;
- new resource management issues for tertiary educational institutions in the interests of optimising satellite use and achieving rationalization and co-ordination.

The paper also examines the range of educational options generated by the new technology and presents some scenarios for tertiary education in the late eighties.

:communication satellites
:distance education
:communications planning
:policy and planning
:educational planning

#148
GREEN, Lyndsay.
A Management Manual fo Public Service Satellite Projects. Ottawa, Department of Communications, 1981.

This manual synthesizes the knowledge gained from the Canadian Hermes and Anik-B communications satellite projects. It is a practical handbook designed for use by planners and managers of public service satellite projects. The manual is also intended for policy-makers and others interested in the assessment of projects which make use of communication satellites.

The author of the manual does not advocate the use of communication satellites. Rather, she recommends what should be done once the decision has been made to proceed with a satellite-based service. More importantly she argues that the recommendations contained in the manual are equally applicable to public telecommunications projects which do not involve communication satellites. In fact the author notes that many past communication satellite projects could have been conducted with more conventional terrestrial telecommunications systems.

The manual presents a chronological outline of the steps which are necessary for the implementation of public service satellite or telecommunications projects. These are:

Planning
- Project conception
- Staffing
- Project development
- Important early decisions

Financing
- Financial arrangements with funding sources
- Financial administration

Management
- Management tasks
- Management principles

User participation
- User participation program
- Methods of user participation

Public relations
- General public
- Project supporters
- Decision makers

Sponsoring organizations
Programming
Programming procedures
Programming content
Training
Establishing training programs
Training community co-ordinators
Training program procedures
System Design
System design process
System design factors
Equipment selection
System Installation
Site selection procedures and criteria
Preparation for installation
Installation
System Operation
Evaluation
Follow-up

Because this manual is based on the experience gained from the planners and managers of a series of projects, and because the document is clearly written and logically organized, it is an essential reference for anyone planning to initiate a public service communications project.

:policy and planning
:communications planning
:telecommunications in education
:educational planning
:communications satellites

#149
GREENE, Alexis.
"Poor Ratings for Two-way Television," Change, vol.11, no.4, (May-June, 1978), pp. 56-7, 72.

This article discusses the poor response to the interactive cable television system called QUBE, which is located in Columbus,Ohio, U.S.A. The QUBE system includes 30 channels, satellite link-ups, and an interactive capability. QUBE subscribers are able to select from a variety of programs through a central computer, and participate in talent contests, and local referenda by means of a special set of response buttons on their terminals.

During 1977, six Ohio colleges took part in a project to broadcast educational programs through the QUBE interactive facility. It was found that videotapes were preferred to live interactive television, and that there was a low level of student registration for cable television courses.

The possible reasons for the under-use of the QUBE system are the cost, a low level of need for such a system, lack of publicity, and doubts about the value of educational television in general.

The article concludes with the suggestion that interactive technology may be a "medium in search of a message". It states that the effective application of this type of technology requires an understanding of its potential and its uses, so that it can be successfully integrated into the existing non-technological system. Implementation of interactive technology, the article suggests, should be accompanied by technological education, and experimentation.

:educational technology :cable television
:television in education :computers in education
:needs assessment :project evaluation

#150
HAMMOND, Morrison.
"Cable Television in Australia: Educational Implications," In, Cable and Subscription Television Services for Australia, vol.5: Social, Economic and Education Studies, Canberra, Australian Government Publishing Service, 1982, pp.191-302.

This section of the Australian Broadcasting Tribunal report on cable and subscription television services, deals specifically with the use of these services in education and training in Australia. Discussion includes the existing uses of T.V., for educational purposes in Australia, possible enhancement of educational services by cable and subscription T.V., a survey of educational needs, current and possible applications, potential problems and the relationship of cable television and educators to the domestic communication satellite.

The project research method included structured interviews, questionnaires, and a literature search which covered examples of overseas experiences. The report also contains samples of the questions asked, survey responses, information about teacher's discussion groups and questionnaire design.

There are sections on the ABC as the currently most utilized technological medium in schools, and on the theory of instructional technology, defined as the development, application and evaluation of systems, technologies and aids - to improve the process of human learning. Existing alternative technologies are also discussed, in the light of planning for the introduction of new communications technologies.

The conclusions and recommendations show that there was little support for the educational use of subscription T.V., and virtually no support for cable T.V. However, if these systems were introduced, the report states that there would be a need for adequate training and guidance in the their use, as well as ongoing programmes of evaluation..

Specific recommendations with respect to education suggest that cable television should be fully interactive, should not be used for direct instruction, and should supplement rather than replace existing educational services. Further recommendations suggest that:

- the use of T.V., for adult, continuing and professional update education should be encouraged, and that provision should be made for institutional networking at secondary, technical and tertiary levels.

An important point is made regarding the planning for the educational use of new communications technology. The authors note that so often one finds technology and media looking for a use, or worse still, learning and instruction is adjusted to fit a technology. This leads to the most significant conclusion in the report which states that education should not be used as an argument for the introduction of cable television. Existing technologies are able to perform most of the functions required of present-day education.

:needs assessment :cable television
:television in education :educational planning
:communications planning

#151
HEDBERG, John G.
"A Proposal For An Educational Radio Station," Australian Journal of Adult Education, vol.14, no.3, (November, 1974), pp. 112-117.

The need for the provision of special interest stations, particularly aimed at an audience comprising technical college, college of advanced education, and university students is discussed. The article then outlines a specific proposal for an educational station that would fill existing gaps in the current Australian broadcasting system.

The aims of a Working Party of the Royal Melbourne Institute of Technology External Studies Policy Committee, set up to draft a report on the need for an institute broadcasting station, are described. There is also discussion of planned programmes, licensing, technical provisions, networking, funding, and time-tabling of the planned service.

Hedberg states that while the proposed station meets the important needs of students studying in the external mode, it also provides for student training in both technical and production areas. It also provides greater flexibility and opportunity for students in the middle and higher technical areas, who, at present, must obtain day-release from employers, in order to further their studies. R.M.I.T's unique position in relation to external studies, especially in the technical and further education areas, means that when combined with the offerings of other educationally interested organizations, the proposed station could provide

alternative radio for Melbourne and Victoria.

:public radio
:educational planning
:policy and planning
:radio in education
:communications planning
:needs assessment

#152
HOOPER, R.
"Computers and sacred cows," In: Aspects of Educational Technology, vol.8. Communication and Learning. (eds.) J. P. Baggaley, G. H. Jamieson, and Harry Marchant. Bath, Pitman (1975), pp.15-28.

This paper scrutinizes a number of assumptions that have been taken for granted - by the "converted" educational technologist and/or the "unconverted" teacher - in the application of communications and educational technology to learning. The author draws examples from the early work of the National Development Programme in Computer Assisted Learning, and from experience in the Open University and in the U.S.A.

The assumptions are as follows:
- the live teacher is not a medium;
- in educational innovation, development builds upon research;
- an educational innovation that is not formally evaluated will not win widespread acceptance;
- the essence of evaluation is control group experiments;
- the first stage in the design of educational materials is the definition of audience and objectives;
- educational communication is a two-way process.

The paper suggests that these statements are at best half-truths, and argues that the application of communications and educational technology remains today a highly pragmatic and applied art. The scientific paradigm of proof has been over-sold to the detriment of progress.

:educational technology
:literature review

#153
HOWDEN, M. E. H., and HAMMOND, M. F.
Modes of learning in open tertiary education in science, Macquarie University, 1979.

The uses and advantages of television programmes as a means of promoting more effective learning for external students studying an experimentally-based science course are described.

Two groups Macquarie University students studying an introductory

chemistry course externally viewed video tapes covering the course at centres near their homes. The video tapes were in addition to normal residential schools and assignment work. Results of students studying Chemistry 101 who used video tapes were compared with control groups of students who did not have access to video tapes. The test groups using video tapes were able to stop the tapes and replay sections of the complete tapes as often as they found necessary.

Involvement with the video programmes lessened the students' feeling of isolation from the university and helped to clarify topics which were difficult to understand in the textbook. Filmed experiments and demonstrations on the video tapes also helped increase understanding. Good students appeared to do well with or without the aid of video tapes, but average and poorer students derived most benefit.

The final grades of test and control groups showed no significant differences. However, assignment marks of the test group were significantly better than the control in the first year, but showed no difference in the second year of the trials. Reasons for these trends are discussed in the report.

:video in education :distance education
:project evaluation :learning materials

#154
HUTTON, D. W.
"Ten Years in Educational Television," Pivot, vol.5, no.4, (1978), pp.44-48.

This article presents a theoretical discussion of educational television. The author begins with an outline of the capacities of television as a communication medium, and the implications of those capacities for designers of educational television programmes. This is followed by a consideration of the needs for, and objectives of broadcast television, and the relationship between the aims of education, and those of television. There is a brief discussion of the problems of presenting educational television programmes.

The article concludes with discussion of the increasing awareness of educational television as a means of communication. The author suggests that there should be further research into educational television and that this research should cover issues such as the relationships between television viewing, types of message conveyed and social behaviour.

:television in education :learning materials
:literature review

#155
JONES, F.
"Teletext in the primary school," Visual Education, (September, 1979), pp.33ff.

This article discusses a research programme set up by the Educational Research Area of Brighton Polytechnic in the U.K. It was designed to evaluate the potential of teletext for use in primary schools. The project was conducted in six junior schools during 1978, these being provided with button pads and television sets capable of receiving teletext.

The article considers questions such as the operation of equipment, pupils' and teachers' responses to the new medium, and the appropriateness of teletext materials to the school curriculum.

The overall theme of the article is the question of whether teletext is a worthwhile technological innovation in the classroom, given that many teachers are reluctant to use a new medium until it has been successfully demonstrated, and has proven advantageous over existing alternatives. The view presented here is that teletext may well find a place in primary education.

:educational technology :teletext in education
:project evaluation :learning materials

#156
KEMELFIELD, Graeme.
"Some explorations in research, evaluation and decision-making in schools broadcasting," Educational Broadcasting International, no.9, (March, 1976), pp. 27-31.

This paper examines the use of research and evaluation data for educational broadcasting planning and decision-making. The author suggests that the research findings themselves are often influenced by the research method and the initial research question.

The paper discusses the aims and strategies of broadcaster/researcher collaboration, and then identifies three starting points for research studies. These are:

- whether the intended aims of a programme series were being met, and the real value of programmes for their school audience;
- testing hypotheses about the effects of broadcast television and of production techniques; and
- investigating the validity of complaints - classroom reception of television.

The questions raised by these starting points; the methods adopted to investigate them, the resulting research findings, and their

implications for decision-making are then illustrated with reference to specific studies of British educational television programs.

The author concludes by stating that no single research methodology would be suited to the variety of production issues chosen for research and evaluation. Rather, the need is for a variety of investigative methods geared to meet particular situations. Finally, there are some suggestions as to the potential of research and evaluation for assisting decision-making in educational broadcasting.

:television in education
:radio in education
:project evaluation
:literature review

#157
KITT, John.
"Birth of Roctapus," Quest, no.26, (December, 1978), pp.9-12.

Following a brief discussion of the effects of television on children, the author presents a description of the magazine-style educational television project Roctapus. Roctapus (Really Outstanding Colour Television About Practically Unlimited Subjects) is a television series produced by the Queensland Department of Education each fortnight, and supplied on tape to all schools in areas designated at Priority Country Areas Program.

The article outlines the features of Roctapus and then discusses its development, implementation and costs, concluding with a brief evaluation of its success.

:television in education
:project evaluation
:video in education
:rural education
:Roctapus
:economic analysis

#158
KITT, John, DAVIES, N.George, and GILLAM, John A.
School of the Air by Satellite: A study of the improvement of distance education in North-west Queensland using the Australian Communications Satellite System. Report prepared for the Queensland Department of Education and the Commonwealth/State Advisory Committee on the Educational Use of Communications Technology. Canberra,September, 1983.

The Queensland Department of Education and the Commonwealth/State Advisory Committee on the Educational Use of Communications Technology commissioned this study as a follow-up to an earlier more general planning study (Davies and Gillam, 1983). This particular study concentrates on the Mount Isa School of the Air and was designed to

help in the consideration of the educational uses of the Australian domestic communications satellite system which will be launched in mid-1985.

The report considers the variety of educational services available to isolated students in North-west Queensland and considers possible functional regroupings of the services provided by the Primary Correspondence School, the School of the Air, the Priority Country Area Program and the Loan Video Scheme.

Two possible directions for change are considered: strengthened centralism and strengthened regionalism. And using assessment criteria developed in the study, it is argued that strengthened regionalism would best develop the quality and variety of distance education services. It is suggested that a School of Distance Education could act as the coordinator of correspondence lessons, School of the Air lessons, itinerant teachers and other special projects in the region.

It is argued that the improvement of communications for isolated students will not occur overnight, but will come gradually as private-line telephony and satellite links become available. Existing two-way radio links, with all their shortcomings, will be required for students who move frequently or enrol only for short periods of time. It is suggested that the School of the Air could operate successfully by integrating the existing two-way radio services with new telephone and satellite-based communication links. This integration might take several years while students were progressively equipped with telephone terminals or satellite earth stations and while the notion of the School of Distance Education was being established.

According to the authors the introduction of satellite communications offers more than the possibility of improving existing two-way radio communications between teachers and students. The planned domestic communication satellite system could be used to provide isolated students with educational television and access to computer-based services. They argue that the challenge for educators is to take full advantage of the potential of the new communications technologies.

The authors argue that ways can be found to successfully develop new administrative arrangements and provide improved educational services by using new communications technologies. Even so, these changes are likely to be unsettling. Administrative and technological changes will need to be introduced carefully so that all concerned can become familiar with the new circumstances. In order to help in the development of the system, the authors recommend that there be a trial introduction of a School of Distance Education using a combination of two-way radio, telephony and satellite communications. This trial would help in an evaluation of the total cost of a new system and reduce some of the uncertainties associated with the full-scale implementation of a new system.

The authors recommend that the Queensland Department of Education assess the desirability of initiating a one year trial which would commence in January 1986, enter into discussions with AUSSAT on the terms and conditions of a trial, and plan in co-operation with the

Commonwealth/State Advisory Committee on the Educational Use of Communications Technology and other interested Departments of Education, the initiation of operational services in an evolutionary fashion from January, 1987.

This document is of particular importance because it is the first major planning document to be produced in Australia which recognises the importance of long-terms coordinated planning if educators are to make use of new communication services. The study is based on a thorough analysis of current educational services offered in the region as well as a careful analysis of the ways in which the introduction of new communications technologies need to be planned with existing operations and technologies, and possible new services in mind.

:communications satellites :distance education :isolated children
:educational planning :communications planning
:needs assessment :School of the Air
:economic analysis

#159
LAMONT, Ann.
"Educational Television: A review of the literature for the purpose of establishing some evaluation criteria." Queensland Institute for Educational Research Journal, no.21, (1982), pp.18-27.

This article commences with a theoretical overview of educational television (ETV). Following a definition of ETV and a brief description of its history, the types of ETV and the characteristics of ETV are discussed. Videotapes and broadcasts are compared and the advantages of each are highlighted. The effects of ETV are described. Factors influencing the success of an ETV program are discussed and a list of criteria which characterise a successful program is presented.

:television in education :educational technology
:literature review

#160
LEMARNE, A., GOLDSWORTHY, F., and OTTLEY, Judith.
"Evaluation of a pilot external studies programme through broadcast television," The Australian Journal of Advanced Education, vol.3, no.3, (December, 1973), pp.16-18.

This article describes and evaluates an experiment in educational broadcasting conducted by the Riverina College of Advanced Education. The College has a large proportion of external studies students who attend regional Study Centres at Wagga Wagga, Albury and Griffith. Aware of the difficulties faced by teachers having to travel to Study Centres, the College hired the time and facilities of three rural

television stations for the production and broadcast of a weekly half hour programme to support a first year subject called "Effective Communication." This subject was taught using a combination of face-to-face group discussions, broadcast television programmes, printed materials, audio tapes and assignments.

Television broadcasts were supported by written materials and were recorded on both video and audio tapes for subsequent replay.

The article discusses the evaluation of the educational outcomes, and the student and public attitudes to the programmes. There is a brief discussion of comparative costs and benefits.

:distance education
:project evaluation
:rural education
:television in education

#161
L'HENRY-EVANS, Odette.
"Teaching by Telephone: some practical observations," Teaching at a Distance, no.1, (November, 1974), pp. 67-9.

This article offers some informal hints on setting-up and running a telephone tutorial at the Open University in the U.K. Points covered range from the need for concentration and confidence-building, through initial telephone contact and preparation, to the actual organization and structuring of a telephone conference.

:distance education
:telephone in education
:Open University
:teleconferencing

#162
MARKLE, N. H., MARKLE, D. G., CARLBERG, C. G., and FOOTE, D. R. History and Recommendations Resulting from Evaluation Planning for the Federation of Rocky Mountain States' Educational Technology Demonstration. Stanford University, Department of Communication, 1974. (ED 100 406)

A summary of the first 18 months of operation of the Federation of Rocky Mountain States' Educational Technology Demonstration (renamed Satellite Technology Demonstration after May 1973) details the history of the demonstration and explains the rationale for the demonstration's evaluation planning. The report concludes with recommendations for future social demonstration projects, noting that it is inherently difficult to achieve a workable balance among political constraints, operational constraints, social constraints, and at the same time reach the project's goals.

This report is important in an Australian context because it illustrates the difficulties which are inherent in any large-scale

demonstration of a new technology.

:communications satellites :telecommunications in education
:project evaluation :policy and planning
:educational planning :rural education

#163
MARSHALL, G., and HERBERT, M.
Recorded Telephone Messages: A Way to Link Teacher and Parents. St.Louis, Missouri, CEMREL, 1981. (ED 211 2000)

This report presents an evaluation study of the Recorded Telephone Message Project which used teacher-recorded telephone messages as a means of encouraging parents to help their children learn basic skills. Each week for 31 weeks, elementary school recorded a 2 to 3 minute telephone message which recapped the week's classroom work on basic skills. The message also gave parents suggestions for home activities as well as a telephone number to call if they wished to arrange a meeting with the teacher or procure supplementary teaching materials.

Data for the evaluation were collected through a questionnaire mailed to parents, 47% of whom returned it. Evaluation results included the following: the project was implemented consistently and with a relatively high level of use; most of the parents who returned questionnaires reported using the telephone service with some frequency and using at least five activities to improve children's basic skills; nearly all of these parents were satisfied with the project; achievement scores of students in the telephone classes did not differ from students' achievement scores in non-telephone classes; and of the students in the telephone classes, a direct relationship between students' achievement scores and frequency of telephone usage was found for third graders only.

Recommendations are given to strengthen teacher/parent links in a telephone message project. Appendices include the parent questionnaire and a list of parents' comments about the project.

:telephone in education :project evaluation
:telecommunications in education

#164
MATHEWS, Nora. (ed.)
Radio and T.V. in Schools: The effective use of programs. Canberra, Australian Broadcasting Commission, 1975.

Educational broadcasting is widely recognized as a means of stimulating or enhancing any learning situation. This booklet discusses the advantages of educational broadcasting services provided

by the Australian Broadcasting Commission through radio, television and radiovision. These forms of media are seen as sources of enrichment to the education of pupils in the five to eighteen year age group, by promoting learning as an activity, and encouraging responses to broadcast materials.

The booklet offers suggestions on integrating lessons around a program, and guidance for the effective selection and use of broadcasts and associated materials.

It is suggested that educational broadcasts should not be seen as a substitute for a teacher, but rather, as a complementary resource. Discussion is made of programme information, the role of teachers, and responses and activities associated with broadcasts.

There are some useful details on the actual use and maintenance of receiving equipment, and information on recording of programs, and resource centres.

:television in education
:radio in education
:resources guide
:learning materials
:user manual

#165
MEED, John.
"The Use of Radio in the Open University's Multi-Media Educational System," Educational Broadcasting International, no.9, (March, 1976), pp.16-20.

Radio broadcasting plays an important role in the Open University. This article describes an evaluation of Open University programmes that was carried out by the university's Audio Visual Media Research Group.

The aim of the study was to provide an overall picture of the University's radio broadcasting which would balance the intensive evaluations of individual programmes. While examining Open University programmes, the study also aimed at devising a useful framework for categorizing programmes. It was hoped that this conceptual scheme would have wider implications for educational broadcasting.

The article begins by outlining the background to radio at the Open University, and briefly discussing policy and decision-making which guides the production, transmission and the use of programmes. This is followed by a section on the research method which was used. This comprised interviews with programme producers, examination of tapes and programme scripts, and discussions with other researchers.

The remainder of the article contains details of the classification of

radio programmes, focusing mainly on the relationship of programmes to the other components of the Open University courses.

The results of the study show that there is considerable uniformity among programmes, and that many programmes are merely appendages to courses, rather than being a part of an integrated whole.

:radio in education
:project evaluation
:educational technology
:Open University

#166
METTY, M.
"Policy Implications and Constraints of Educational Telecommunications in a Subarctic Region," 1982. (ED 222 216)

This paper is important in an Australian context because many of the problems of the American subarctic region are shared by the remote outback areas of Australia. For example, the issue of the local control of communications services and programs is of significance to citizens of the Australian outback as well as citizens of the American subarctic regions.

The introduction of telecommunications hardware and systems for educational purposes in Alaska has been rapid and dramatic, but has not adequately addressed the needs of rural Alaskans. The policy-making process for the delivery of educational systems has emphasized technical questions, the breadth of dissemination of programs, costs and benefits, and the choice available to consumers.

While such policy approaches are likely to increase access to educational programs, they operate within a framework of the status quo and do not increase the control of the population over the technology or the content of the programs. Neither do these policies challenge the applicability to a rural Alaskan setting of programming based on the culture and values of white, middle-class America. Indeed, experience indicates that programs produced in and for the residents of the lower 48 states cannot adequately address the needs, capacities, experiences, and learning strategies of rural Alaskan residents without major modifications.

If educational programming is to be based on community needs, rather than on the technological potential for dissemination, consumers must have adequate information about the system and provide input into the processes of prioritizing, producing, and disseminating educational programs. A final concern for policy making, that of the potential for community destabilization, inherent in the introduction of new technologies, demands that policies reflect the purview of both the clientele and the state.

:needs assessment
:telecommunications in education
:policy and planning
:educational planning

#167
MONSON, M.
Bridging the Distance. An Instructional Guide to Teleconferencing. Centre for Interactive Programs, University of Wisconsin - Extension. (ED 211 064)

This document provides an excellent introduction to educational teleconferencing. It is particularly valuable for someone who might want to organize and evaluate a teleconference.

It is designed to present teachers, moderators, and program coordinators with techniques for better planning, presentation, and evaluation of teleconferencing programs, this manual is based on research and practice findings in the areas of adult education, communications, and learning and listening skills. The characteristics of two-way teleconferencing are reviewed and suggestions are offered for humanizing the technique used, developing interactive tools for participants, examining message style, and utilizing participant feedback. Checklists for organizing and evaluating teleconference programs and a discussion of the overall effectiveness of teleconferencing are also included.

:telephone in education: :distance education
:educational planning :resource guide

#168
MOORE, Michael.
"Educational Telephone Networks," Teaching at a Distance, no.19, (Summer, 1981), pp.24-31.

This paper contains a description of educational telephone activities underway in the State of Wisconsin (U.S.A.), a discussion of the characteristics of the telephone as an educational tool, and the possibility of establishing national and international educational telephone networks.

Activities in Wisconsin which are described include the Educational Telephone Network (ETN) which is mainly used for continuing or non-credit education with an emphasis on education for professionals, such as doctors, lawyers, pharmacists, nurses, engineers, ministers of religion, librarians and social workers.

Other telephone-based educational systems managed by the ETN include DIAL ACCESS - a round-the-clock delivery system through which callers obtain access to a vast library of audio-cassettes. This was originally designed to give doctors access to an up-to-date reference library. Research has shown that as many as 105,000 calls for medical tapes might be handled in a year and that ten per cent might be for emergency information. (Other tapes are on less serious matters, with

two hundred tapes about how to grow vegetables.)

SEEN is the Statewide Extension Education Network with the added capability of an "electrowriter" and "electronic blackboard" which permits the sending of line drawings, graphs, and other written materials. This is particularly important for engineering, mathematics and business courses.

The MEET-ME system is an automatic teleconferencing device which can be used to call up and link small audience groups of people for highly specialized programs.

The author suggests that some of the particularly significant attributes of telephone-based educational are the ability to provide:

- links between people over a wide area;
- two-way, interactive communication;
- highly specialized services where audience numbers are very low;
- immediate and relatively private communication.

The author proposes that the Open University should set up its own telephone conference system - the Open University Teleconferencing Network (OUTNET) and that such a system could be extended to include international coverage by using satellite links.

:telephone in education
:educational planning
:project evaluation
:Open University

#169
PARKER, Lorne, A., and MONSON, Mavis, K.
More Than Meets the Eye. University of Wisconsin-Extension: Center for Interactive Programs, 1980.

In this booklet two types of audio instruction systems are evaluated: One-way radio, and two-way teleconferencing. The authors survey the research, and the historical development of these systems and then discuss their respective functions and advantages. They conclude that whilst radio and teleconferencing systems do enhance educational instruction and provide greater versatility than face-to-face situations, they should be seen not as replacements for existing learning situations, but as sources of enrichment.

There are excellent bibliographic sections included in this booklet.

:audio in education
:educational technology
:telephone in education
:annotated bibliography
:teleconferencing
:radio in education
:literature review

#170
PARKER, Lorne A., and RICCOMINI, Betsy (compilers).
The Status of the Telephone in Education. Proceedings of the Second Annual International Communications Conference, University of Wisconsin, Extension Communication Program, n.d.

The papers, mostly brief, cover a range of issues relating to the design, application and evaluation of programs utilizing teleconferencing facilities. In general, they reveal some common points:

- an appropriate medium should be selected to suit the instructional purpose, and budget requirements
- programs should be tailored to suit a particular chosen medium
- programs that employ teleconferencing facilities should be adequately prepared and organized
- that teleconference should be an integral part of any instructional program, and not be seen as simply replacement of one type of medium with another.

Other significant points raised indicate the need to provide supplementary visual materials, and to employ procedures that enhance active participation in the teleconference (i.e., appropriate attention focusing mechanisms, and auditory cues to indicate response).

Some particularly useful papers include:

- a discussion of problems associated with the social evaluation of teleconferencing media (Johansen)
- experiences of using teleconferencing for Open University distance learning tutorials (Holloway)
- the use of teleconferences for academic staff meetings (Dick)
- methods for designing teleconference programs (Baird)

This will be a valuable document particularly for planners and educators interested in the potential of telephone networks for educational purposes.

:telephone in education :teleconferencing

#171
PARKER, Lorne A., and OLGREN, Christine H. (compilers).
Teleconferencing and Interactive Media. Proceedings of a conference held at the University of Wisconsin - Extension: Center for Interactive Programs, 1980.

This volume offers over fifty papers which discuss developments, applications and evaluations of teleconferencing and interactive media. This substantial body of information highlights the diversity and importance of new forms of telecommunications in fields ranging from business, through government, education, medical and telecommunications industry.

The range of technologies represented is also diverse and includes audio conferencing, audiographics, slow scan televideo, full motion video conferencing computer systems and videotex services. For convenience, papers are grouped into five categories:

- teleconferencing in business and government
- teleconferencing in education
- teleconferencing in health and medicine
- program design and research
- computer conferencing and messaging systems.

The papers are all based on experience gained in the United States, Canada, England and Australia and represent many points of view: user designer, administrator, manufacturer, and researcher. This report should be of value to anyone concerned with interactive communications media.

:teleconferencing :educational technology
:telephone in education :educational planning
:learning materials

#172
PILLEY, Trish.
"Taking Advantage of Television," The Educational Magazine, vol.39, no.5, (1982), pp.17-19.

In this article, the value of television as an educational medium is discussed, in terms of providing relevant program material to HSC students in isolated rural schools.

The article describes a survey of needs for, and programming of materials relevant to the Victorian HSC syllabus. The project is funded by the Victorian Country Education Project. The author's theme is that good educational television need not be expensive to produce,

should be considered by commercial stations, and can be used successfully to meet specific curriculum demands.

:television in education
:rural education
:project evaluation
:learning materials
:needs assessment

#173
QUEENSLAND EDUCATION DEPARTMENT.
A Demonstration of Teaching by Telephone, Production Services Branch. (November 1981).

This report describes and evaluates trials in the use of two-way audio communication systems for teaching purposes in two Brisbane schools. This trial was designed to evaluate the use of two-way audio communication equipment for distant learning situations so that pupils in remote areas can participate in classroom lessons.

A telephone system was selected as the communication medium, and a learning environment was constructed in which participants were visually and acoustically "isolated" from one another, in order to simulate a satellite communications system being used for distance education. In this arrangement, a teacher could communicate with a number of pupils, simultaneously, or just with one individual.

Throughout, the report emphasizes the use of equipment, teaching strategies, descriptions of lesson preparation and implementation, and resources used. Of particular note are the responses from participants.

Recommendations and conclusions point to the need for further trials utilizing this type of equipment, and oriented specifically towards pupils in remote areas, and with participant group composition of a more heterogeneous nature (i.e., including those with disadvantages or disabilities in addition to students of average or above-average learning ability.)

Appendices and photographs include details of equipment and learning environments, observers' reports, and resources produced by both students and teachers.

The report's main strength is its detailed assessment of the equipment used, and participants' responses to the experiment.

:distance education
:rural education
:telephone in education
:project evaluation
:communications satellites

#174
QUEENSLAND EDUCATION DEPARTMENT.
Evaluation of ABC Primary School Broadcasts, Research Branch Evaluation Series, October, 1980.

This study, carried out in 1978 by the Research Branch of the Queensland Education Department was carried out in order to provide information to the Australian Broadcasting Commission's State Education Broadcasting Advisory Committee, concerning ABC educational radio and television for State primary schools. The information includes access to equipment and adequacy of reception, and details of specific broadcast series. These latter aspects included:

- use and familiarity of series;
- purposes for which series were used;
- possible factors affecting the use/non-use of ABC broadcasts;
- suitability of available program information and support material;
- importance attached to series by teachers;
- opinions related to planning of future broadcasts.

The questionnaire survey results were presented in a series of tables. The findings revealed a wide variation in the degree of familiarity with individual radio or television series, and in the use of programs. The study also highlighted some problems associated with the integration of programs into existing courses, and the need to take the views of teachers into account when broadcast programs are being planned.

:radio in education
:television in education
:project evaluation
:educational planning

#175
QUEENSLAND EDUCATION DEPARTMENT.
A Loan Video Scheme Pilot Project. Production Services Branch, July, 1982.

This document describes a project which was developed to provide guidelines and recommendations for the introduction of a full-scale Loan Video Scheme. The Loan Video Scheme is designed to provide, on loan, video facilities to isolated children living outside normal television transmission areas. Each eligible student would have access to complete video facilities, i.e., monitor and recorder/player.

In Queensland, eligibility for the Loan Video Scheme is restricted to children enrolled in the School of the Air who will receive, in addition to the recording/playing equipment, a fortnightly three hour

cassette of educational programs produced by the ABC and the Production Services Branch of the Queensland Department of Education.

The intention is thus to enhance the value of educational television by allowing greater control and flexibility in program scheduling and, importantly, the presentation of lessons and activities based on pre-selected television programs.

This particular project was conducted over a six week period during which equipment was given to participating families at a series of seminars, and a weekly lesson was conducted by School of the Air teachers, based on ABC programs. Participants included forty families and three Schools of the Air in Queensland.

The report contains an introductory project description, outlining the major aims of the project which are, as an extension of educational T.V., to assess the practicability of distributing, administering and using home video equipment, and School of the Air procedures and teaching methods.

Evaluation consisted of participant reports (using evaluation booklets and printed forms), and detailed notes and comments on lesson preparation and presentation. The major part of the report comprises descriptions of trials, individual evaluation reports and five appendices that include samples of evaluation forms and accompanying program notes.

:distance education
:educational technology
:Home Loan Video Scheme
:video in education
:project evaluation
:learning materials

#176
REID, Fraser J.M. and CHAMPNESS, Brian G.
"Wisconsin Educational Telephone Network: How to run educational teleconferencing successfully," British Journal of Educational Technology, vol.14, no.2, (May, 1983), pp.85-102.

For a decade and a half the residents of Wisconsin have had access to a distance education service which has few rivals in the world. Based on the state capital, Madison, the University of Wisconsin's Educational Telephone Network (ETN) links together over 200 classrooms across the state on what is virtually a huge "party line". The ETN enables students to listen to a lecture or panel discussion, ask questions and exchange ideas with other students hundreds of miles away. According to the authors there is little doubt that the service has been highly successful. The growth of the network and its facilities are seen as evidence of this success.

The paper summarizes data which describes the network, and attempts to identify the chief reasons for its success. This is done through an examination of network services, operation, administrative organization, and the ability of the network to meet the needs of

users, whether those users be people or organizations.

Based on the previous analysis four reasons for the success of the ETN are identified. They are:
-the network forms an integral part of the University of Wisconsin's state-wide teaching services,
-the service meets the needs of a single, well-defined audience sector,
-the regional organization of the service has made it possible for ETN to benefit from economies of scale,
-program support services which are offered by the university may compensate for some of the shortcomings of telephone conferencing by itself.

:project evaluation
:distance education
:teleconferencing
:policy and planning
:educational planning

#177
ROBINSON, Bernadette.
"Telephone tutoring in the Open University: A review," Teaching at a Distance, no.20, (Winter, 1981), pp. 57-65.

This paper reviews the use of the telephone in the Open University, illustrates its use in particular regions: considers factors affecting the use of telephone and raises questions about the appropriate role of the telephone in tutorials.

Information presented by the author shows that use of the telephone and attitudes towards the use of the telephone in tutorials vary from region to region within the Open University.

For an administrator or course planner contemplating the use of telephone tutorials, this paper contains a lucid discussion of the key issues.

:literature review
:telephone in education
:Open University

#178
ROWLAND, Robert.
"Some Thoughts on the Use of Broadcasting in the Open University," Teaching at a Distance, no.2, (February, 1975), pp. 61-65.

This article discusses the role of broadcasting at the Open University in England. The value of broadcasting is emphasized, by presenting figures on audience levels for different courses at the Open University.

The author argues that television and radio programmes should be presented as integrated components of Open University courses and that their purposes be clearly defined, through greater emphasis on programme notes, and other information. Broadcasts, he maintains, should be tied more closely to their accompanying printed material.

The article presents details on the impact of television and radio on specific Open University courses, and then concludes with a discussion of the applications, and development potential of television in education.

:television in education
:educational planning
:radio in education
:Open University
:project evaluation

#179
SCRIVEN, Michael.
"Education and future technology." Paper presented at the ANZAAS Conference, Perth, May, 1983.

The first part of this paper presents an account of the author's perceptions of major future developments in educational technology. In essence this becomes a discussion of some of the educational applications and implications of communication technologies such as computers, broadcast television and computer games. There is also a discussion of the educational uses of computers and a critique of some common assumptions made by computer educators. But the main discussion concerns the cost implications of new forms of electronic publishing which are seen as ways of increasing the diversity of offerings and lowering prices.

The second section of the paper considers the coming backlash against computer education and why that backlash should be taken seriously. And for the sake of this discussion computer education is taken to mean the use of computers to either teach or assist in teaching or learning. It does not refer to teaching about computers.

According to Scriven the negative backlash will arise because educational technology as a panacea has always been subjected to wild swings of enthusiasm and equally large swings of disillusion, recrimination and cynicism. This negative backlash will also arise because many will react negatively to the excessive claims of some supporters of educational uses of computers. This backlash is partly deserved because the craft of education cannot overcome the control of fashion.

Because extremely powerful social forces are propelling the educational uses of computers, Scriven argues that there must be a systematic attempt to evaluate existing and possible future uses. He outlines a series of questions which need to be answered by any evaluation together with some possible evaluation strategies.

This paper is interesting because it represents an attempt to set the educational uses of new communications technologies in their social context. While the author does not expect readers to agree with his conclusions, the loosely structured argument does raise a series of interesting and important issues.

:policy and planning
:computers in education
:educational planning
:educational technology
:project evaluation

#180
SHORT, John.
"Teaching by telephone: the problems of teaching without the visual channel." Teaching at a Distance, no.1, (November, 1974), pp. 61-66.

Many studies are concerned with the advantages of telephones in education, but this article takes a different perspective and examines some of the limitations of the medium.

In this paper Short asks, what effects telephone communication, lacking the visual channel, has on behaviour, and on the outcome of tasks? He begins by discussing aspects of the visual channel of communication as sources of information. These include non-verbal signals such as physical appearance, facial expression, posture, spatial distance, and factors such as the direction of gaze and unconscious behaviour.

The functions of this visual information are, firstly, to provide feedback which will enable one to plan one's utterances in the light of the other's reactions to what has gone before, and secondly, to convey information about interpersonal attitudes.

The author goes on to outline some situations in which the visual channel is not essential to communication. Where, for example, the purpose of teaching is simply to convey information, then the telephone is as least as effective as face-to-face interaction.

It is suggested that the use of the auditory channel, being more concerned with information and less with interpersonal relations, results in conversations that are more task-oriented. Experimental evidence is cited in support of this, and as a more general example of the methodology which can be used to test hypotheses concerning the effects of changes in the medium of communication.

There is some discussion of the practical implications of non-visual communication, drawing on the author's own experience with the multi-point audio conferencing facility at the University of Quebec. In this section, there is discussion of the task-oriented nature of telephone meetings, and on the effects of telephone conferencing on the structuring of groups.

The article then provides information about the use of visual aids (e.g., notes, diagrams) to support telephone teaching. Concluding remarks state that, although there are many practical advantages of using telephones in teaching, there are also problems associated with the lack of a visual channel. These problems however, are not insurmountable, and it is important to regard teaching by telephone as a complement, rather than a substitute for face-to-face teaching.

:telephone in education :distance education
:literature review :learning materials
:teleconferencing

#181
SEUMAHU, E. Steve.
"Peacesat Australia," La Trobe University Bulletin. vol. 13, no. 21, (November, 1982), pp.2-3.

This article succinctly describes the history and operation of PEACESAT AUSTRALIA, a project which uses NASA's ATS-1 communication satellite. According to the author PEACESAT AUSTRALIA is designed to provide first hand-experience of satellite communications and to encourage experimentation will socially useful applications of that technology.

PEACESAT AUSTRALIA is a development of the network philosophy of the original Pacific Educational and Communication Experiment by SATellite (PEACESAT) project which provided communication services to members in the Pacific Basin. Using relatively simple and low-cost facilities PEACESAT has operated for eleven years and has provided two way voice quality services which have been used for broadcasting, teleconferencing, and for facsimile, teletype, computer and slow-scan television transmission.

The author outlines the application of PEACESAT principles in an Australian context and describes the PEACESAT AUSTRALIA project and the KANGAROO network which comprises a number of Australian sub-networks. These include networks of law enforcement agencies, educators, and a public broadcasting network.

:communications satellites :telecommunications in education
:teleconferencing

#182
SJOGREN, D.
Studies on the Use of Extramural Videopublished Materials in Continuing Education: Final Report. Colorado State University, 1976. (ED 127 989)

The Engineering Renewal and Growth (ERG) program at Colorado State University (CSU) was designed to assist in the continuing education of

engineers. The program used videotapes and coordinated written materials to deliver instruction to the practising engineer. Courses were leased to individual students or industries in which students worked. The courses were taken for continuing education units, not regular college credit, and instructional staff at CSU monitored student progress. Program evaluation was conducted by monitoring the program as a whole and assessing evidence on course effectiveness and quality.

Issues related to students, faculty, the university, administration, and budgets were examined. Evaluation of the program showed that while the first year of ERG was modest, there was no financial barrier to growth.

:distance education
:project evaluation
:learning materials
:video in education
:economic analysis

#183
SOUTH AUSTRALIA. EDUCATION DEPARTMENT.
Communication Trials for Distance Education. Educational Technology Centre, 1980.

In this report, the Educational Technology Centre of the South Australian Department of Education summarizes the results of experiments conducted in the uses of communications technology for distance education.

The experiments were carried out at a number of different schools including primary, high and special rural schools in South Australia, with the aim of establishing the kinds of technological equipment, instruction and/or teaching, interactive and otherwise that are likely to be successful in an educational system using the satellite.

The report describes the kinds of equipment which can be connected to the telephone system and used for educational purposes. The report also considers user attitudes to various communication systems and teaching techniques. The report develops user specifications for this range of equipment so that it can be incorporated into a satellite system designed to enhance educational services in remote areas.

Actual equipment used in these experiments comprises two-way audio devices, facsimile machines, and slow scan television, all linked through telephone lines. Evaluations were carried out on equipment performance, teaching techniques, learning environments and user acceptance of equipment. This information was gathered by means of questionnaire forms for participating teachers and reports by Educational Technology Centre staff.

Conclusions and recommendations advocate the use of telephone link-up equipment for educational purposes for "remote" or "isolated"

students, and suggest that further experiments be conducted on a similar basis in actual "remote" learning situations, to enable assessment by those people likely to be potential users. The report also states that research is needed to investigate such factors as the attention span of students in remote learning environments, the speed of lesson presentation, the characteristics of voice tones and optimum group sizes.

Detailed equipment recommendations are included, and several appendices describe the individual experiments.This report is valuable because it contains detailed descriptions of the procedures and results of the experiments and field trials.

:educational technology
:telephone in education
:rural education
:equipment evaluation
:distance education
:communications satellites
:project evaluation

#184
SOUTH AUSTRALIA. EDUCATION DEPARTMENT.
Distance Educational and Communications Trials:Status Report, Educational Technology Centre, October, 1982.

This document presents a survey of currently available and projected developments in the field of educational communications technology for distance education in South Australia. Three separate sections consider on-going projects, new applications and trials, and new technologies under investigation and trial.

On-going projects include:

-telecommunications systems for rural schools;

-a system called D.U.C.T (Diverse Use of Communications Technology). The D.U.C.T. system is described in some detail, showing its major components as a telephone-linked portable kit with various possible usage combinations, highlighting its potential for teleconferencing - i.e., linking different numbers of participants.

-a satellite communications network utilizing the U.S. ATS-1 satellite system. The three major Australian users of the ATS-1 satellite are outlined, emphasizing the availability and range of uses of this system.

New applications and trials include the use of satellite communications for remote Aboriginal schools; combined telecommunications and satellite technology for Pan Pacific Communications (using PEACESAT System); and uses of D.U.C.T., for music and distance language education.

Other technologies being investigated are computer based domestic

information systems; audio-visual, cassette and micro-computer components, and specialized (Pressure Zone) microphones.

This report is particularly useful for its comprehensive description of educational communications technology in use and under investigation in South Australia.

:telecommunications in education
:educational technology
:equipment evaluation
:distance education
:telephone in education
:project evaluation

#185
SOUTH AUSTRALIA. EDUCATION DEPARTMENT.
Distance Education and Communication Trials: Status Report.
Educational Technology Centre, March, 1983.

This paper brings up to date the information on telecommunications technology which was presented in the October, 1982 Status Report.

Since that document was published, funds have been approved for the continued application of communications technology in the field of education in South Australia and this report surveys the current state of the project, outlining a three phase strategy to equip each regional office and major location within each region, with appropriate telecommunications devices.

This equipment comprises the D.U.C.T., teleconferencing kit described in the earlier document, an educational telephone network, facsimile units, special teaching programmes carried out by correspondence school teachers utilizing telecommunications equipment at the Educational Technology Centre (e.g., French, Spanish, Percussion, Music and Satellite awareness). Also discussed are videotex systems, which use existing television sets to provide a range of educational service information, and Homestead Video which provides personalised video tapes to isolated students.

The report concludes with a brief outline of the new telecommunications technologies which are being developed for distance learning in South Australia.

:telecommunications in education
:educational technology
:project evaluation
:equipment evaluation
:distance education
:telephones in education
:Home Loan Video Scheme

#186
SOUTH AUSTRALIA. EDUCATION DEPARTMENT.
The Elliston Project: A Trial in Distance Education. Educational Technology Centre, 1980.

This paper describes a trial in the use of communications technology for distance education, conducted at the Elliston Special Rural School, on the Eyre Peninsula, South Australia. The trial follows previous experiments conducted by the Educational Technology Centre. The trial is designed to develop communication systems and teaching methods which can meet the special needs of correspondence and rural education in South Australia.

Equipment used in this trial consists of loud-speaking telephones, facsimile machines and slow-scan television sets with monitors. The aim of the trial was to evaluate the potential for two-way audio and visual communications for providing more effective educational services to remote schools and isolated homesteads.

The report highlights the special problems that need to be considered when audio-visual communication devices which are not "face-to-face" are used to supplement existing classroom facilities. It provides a valuable guide to the development of distance education trials, and contains useful sections on equipment used, teaching methods and the responses of participants.

:educational technology
:distance education
:rural education
:telephones in education
:project evaluation

#187
SOUTH AUSTRALIA. EDUCATION DEPARTMENT.
Homestead Video Scheme. Educational Technology Centre, June, 1983.

The Homestead Video Scheme is a service provided by Commonwealth funding, which supplies video cassette recording and playback equipment to many isolated homes beyond the range of normal daytime television viewing.

Children who benefit under this scheme are those in South Australia and New South Wales enrolled with the S.A., Primary Correspondence School or the School of the Air, Port Augusta. As well as equipment, children are provided with two 3-hour tapes every fortnight.

This report describes the scheme, equipment and programme details and includes a map of the area covered by the scheme, and a detailed Information Booklet.

:distance education
:rural education
:project evaluation
:Home Loan Video Scheme

#188
SOUTH AUSTRALIA. EDUCATION DEPARTMENT.
Tarcoola Project: A Trial in Distance Education Methodologies Using Telecommunications. Educational Technology Centre, 1981.

This report describes trials in the use of two-way audio communications technology (telephone hand-set, loud-speaking telephone and slow-scan television) for educational purposes. The project follows closely earlier trials conducted by the Educational Technology Centre, South Australia, and is designed to further investigate aspects of lesson design.

There is a separate section on the evaluation of this project, which identifies the technical, organizational and methodological aspects of this type of distance educational system.

:rural education
:educational technology
:telephone in education
:learning materials
:distance education
:equipment evaluation
:project evaluation

#189
TASMANIA. EDUCATION DEPARTMENT.
Using Technology in Tasmanian Education: An overview of the application of computer technology in the tasmanian education system. Tasmania Media Centre, October, 1982.

In this publication we are presented with a summary of the types of facilities available, and the advantages of using computer-based technology in the Tasmanian education system.

The central facilities described are the Elizabeth Computer Centre, which is used for educational support, computer assisted learning and departmental administration; and the Tasmania Media Centre which carries out a variety of computer-based functions including the monitoring and maintenance of audio-visual equipment used in schools, a media library booking system and a sophisticated recording, duplicating and booking facility for tapes of ABC educational programmes.

In the sections on technology applications, the report lists activities such as: the computerisation of student work-experience programmes - enabling a closer monitoring and improvement of such schemes; teleconferencing facilities; and Education Department innovations such as equipment and stores inventory programmes, and information systems for department personnel. Also described are library service programmes (for cataloguing and circulation), computerised teachers notes on ABC programmes, and word-processing applications.

Further applications of computer technology for learning, and school management. These include promotion of educational uses of micro-

processors, standardisation of learning technology, and the computerisation of student administration.

Finally, the document contains a brief section on the promotion of technological awareness through computer-related subjects at all levels of education.

:computers in education
:library automation
:educational technology
:telecommunications in education

#190
TELECOM AUSTRALIA.
Audio Teleconferencing. A report presented at the SAT-Users Conference, 14th March, 1983.

This user's guide to teleconferencing is presented by Telecom in an informal, easy-to-read style, providing much valuable information on preparing, setting up, and running a teleconference.

The guide introduces the benefits of teleconferencing - i.e., its capacity as a means for group communication, linking two or more people in different locations through a conventional telecommunications line -and then outlines some of the precautions to be taken in producing an effective teleconference. It discusses, for example, the need for adequate preparation and for participatory responses and auditory cues which ensure that the teleconference is used in an interactive fashion and that the attention of participants does not wander. Also, discussed is the need for accompanying visual materials distributed either through the mail ("synchronized presentation") or through telecommunications (i.e., facsimile machines, graphic devices, "light pen", live image studio, slow-scan television, slides, audio-visual materials). The point made is that graphics should enhance an audio presentation.

The guide presents information on alternative teleconference systems (i.e., multi-point, group to group, or group to resource), situations (regular, one-off or ad-hoc), equipment combinations and applications. The importance of providing supplementary visual materials is emphasized through such forms as printed material, video images, visual data, in order to provide a focus for attention, a record of the session and graphic illustration for clarity.

Ideas on how to run a teleconference include discussion of organizers' role, familiarisation, planning, group co-operation, formation of groups, prepared format/content, presentation and running. A supplementary "pink pages" section gives details of formal teleconference procedures for small groups.

:teleconferencing
:telephone in education
:learning materials
:user manual
:educational planning

#191
THORNTON, R., and MITCHELL, I.
Counselling the Distance Learner: A Survey of Trends and Literature. University of Adelaide, 1978. (ED 177 296)

This paper is concerned with the problems encountered in counselling the distance learner.The authors explore trends in literature which might reflect increased awareness of the needs of the non-traditional student and the establishment and mobilization of resources to meet those needs. It is noted that comparatively little has been written in this specialized field so that a major purpose is to provide focus for further work. The need for counselling for non-traditional students is documented in the context of worldwide expansion of non-traditional programs.

Educational brokering - independent learning consultants functioning as intermediaries between diverse groups of students and the vast array of learning resources in their community - is highlighted as an encouraging component of any open education system. It is postulated that the need for counselling and information among non-traditional learners is greatest at the beginning of their study and that higher withdrawal rates among external students as compared to internal ones may be largely due to need for counselling.

Four types of communication technology for distance counselling are examined: correspondence counselling, audio-cassette counselling, telephone counselling (five methods), and face-to-face counselling (three ways). Issues are also raised with regard to counselling the academic staff who work with distance students. Conclusions point up need for investigation of needs of non-traditional students, independent counselling services, training of specialist counsellors, and the range of activities. The bibliography of over 150 items includes journal articles, conference papers, and reports largely of U.S., British and Australian origin.

:distance education
:audio in education
:telephone in education
:literature review

#192
TUROK, Ben.
"Telephone conferencing for teaching and administration in the Open University," British Journal of Educational Technology, vol.6, no.3, (October, 1975), pp.63-79.

In this article the use of telecommunications in the Open University in the United Kingdom is discussed. The author first discusses the the special needs of adult education, and outlines the advantages of using telephones in adult education.

The specific facilities available through the British Post office are examined, and the advantages and disadvantages of these for providing effective educational telephone networks are discussed. The main types of telephone systems suited to educational needs are teleconferencing, and loud-speaking telephones, and these are considered in terms of their applications, effective use, implementation and control.

Teleconferencing, for example, is useful for multi-point communication for housebound, or remote students and is relatively cheap. However, this facility, as available through the British Post Office "Faraday" system, is controlled by the Post Office, and the author argues that there is a need for user control of teleconferencing facilities.

The loud-speaking telephone system is best suited to the linking up of dispersed study centres and enable a single tutor to be linked to groups of two or more students at a number of study centres.

The author concludes that there is a need for the "mixing" of public and private telephone networks, to allow greater flexibility and user control of facilities, and that systems developments should not be inhibited by "revenue considerations".

:telephones in education :Open University
:needs assessment :teleconferencing

#193
TUROK, Ben.
"Telephony: A passing lunacy or a genuine innovation?" Teaching at a Distance, no.8, (March, 1977), pp.25-33.

In this article the use of telephones in teaching is advocated. Turok begins by discussing the Open University and its role in distance education. The Open University's strength, he argues, lies in its correspondence courses, based on the deployment of a variety of delivery systems that cater for a large number of "remote" students.

The correspondence courses are supported by tutorials which, in the context of distance education, are beset by several problems.These are a "scatter" problem of a low student population dispersed over wide geographical areas remote from study centres, and a "disadvantaged" student problem, which refers to those who are housebound for a variety of reasons (e.g., illness, family commitments, etc.,) or whose work necessitates irregular hours and travelling, or those who are institutionalized. Turok suggests a study be made to determine reasons for students' non-attendance at tutorials. He also discusses tutor responsibility in contacting students, and the problem of educationally deprived areas.

The article goes on to outline applications for telephones in education and their advantages and disadvantages. A discussion of one-to-one telephone calls, with overseas examples, is followed by

details of group telephone applications. The alternative modes of group telephone applications include conference calls, in which participants at their home telephones are linked by the Post Office at a designated time; and loud-speaking telephones, whereby small groups of students gather around a centrally situated device and communicate with another group or groups, in separate locations. In this latter situation, a single tutor can speak to one group of students at a single location.

Other applications are: headset groups and conducting meetings by telephone ie.teleconferencing. There is a short discussion of the development of new skills appropriate to the new medium. This includes speech patterns (i.e., loud, intelligible and normal), adequate preparation and commitment to the task, and the consideration of pace, and flexibility. These are seen to be important issues in using a medium that lacks visual communication.

The article also includes a section on teaching by satellite, citing the example of the University of the South Pacific utilizing the American satellite ATS-1 to link up several islands.

:telephones in education
:distance education
:teleconferencing
:Open University
:project evaluation

#194
UNITED STATES CONGRESS, OFFICE OF TECHNOLOGY ASSESSMENT.
Information Technology and Its Impact on American Education.
Washington, D.C., Office of Technology Assessment, 1982.

In October 1980, the Office of Technology Assessment was asked to examine the potential impact of new information technology on American education. This report documents the findings of this research, with ten chapters, seventeen case studies and some fifty tables and figures.

The report includes discussions of the major providers of education and training, and their changing roles. In addition the complete range of new information products and services such as those combining the facilities of computers, telecommunications systems, and video technologies are described.

Two fundamental conclusions are reached, these being:

- that the increasing use of information technology is creating new demands for education and training in the United States. As a consequence there is a need for increased attention to how these demands may be met, and

- that information technology can potentially improve and enrich the educational services that traditional

educational institutions provide. It can be used to distribute education and training into new environments such as the home and office, reach new clients such as handicapped or homebound persons, and teach job-related skills in the use of technology.

:educational technology
:educational planning
:policy and planning
:social issues
:needs assessment

#195
UNIVERSITY OF WESTERN AUSTRALIA, MURDOCH UNIVERSITY and the WESTERN AUSTRALIAN INSTITUTE OF TECHNOLOGY.
Tertiary Education in Western Australia and the Domestic Satellite. Perth, Western Australian Institute of Technology, 1981.

This statement, signed by the heads of the three institutions, and addressed to the Chairman of the State Satellite Advisory Committee, argues for the importance of considering the potential educational uses of the planned domestic communication satellite. It is suggested that the domestic communication satellite system would be able to be used for the provision of educational services for external tertiary students in metropolitan and country Western Australia.

The heads of the three institutions outline some of the ways in which communication satellites have been used for educational purposes and they note their willingness to collaborate with the Western Australian Department of Education and the tertiary colleges in any plan to make educational use of the domestic communication satellite. They also seek assurances that sufficient capacity should be set aside so that educational users will have access to the domestic communication satellite.

:communications satellites
:educational planning
:policy and planning
:communications planning

#196
UNWIN, D.
"Production and Audience Variables in Film and Television: A Second Selected Bibliography," Programmed Learning and Educational Technology, vol.16, no.3, (August, 1979) pp. 232-239.

The paper lists some 45 published accounts of research in the field of production and audience variables in educational film and television. Each citation is annotated. The citations are preceded by a brief review of the field, arranged under the headings production techniques, audience and environment variables, and future directions of research. The point is made that past research has not fitted into any theoretical framework, and that the present state of

knowledge in this important area is of little help in the efficient design of audio-visual teaching materials.

:television in education :literature review
:film in education

#197
VAN DER DRIFT, K. D. J. M.
"Cost-effectiveness of audiovisual media in higher education," Instructional Science, no.9, (1980), pp. 355-364.

In general, economists are engaged in optimising the ratio between benefits and costs. The so-called cost-effectiveness approach is oriented towards producing specified effects at the lowest costs. How this may be done for audiovisual media in higher education is shown in two steps. First, the function-identifying stage, then the cost-analysis stage. The "cost-structures" of seven methods of delivering instructional television are then compared.

Finally, some reasons are given for why cost-effectiveness considerations are still rarely applied in educational decision-making. Structural measures to remedy this state of affairs are proposed.

:television in education :economic analysis
:educational planning

#198
VARLEY, Peter J., TAINTON, Barry E., and WORTHINGTON, Ross R.
Evaluation of Educational Provisions for Isolated Children Enrolled with the Primary Correspondence School in Queensland. Queensland Education Department, Research Branch, July, 1979.

This report, documents the findings of a pilot study set up by the Queensland Education Department to examine aspects of educational provisions for isolated primary school children to identify the available provisions and their impact on the children concerned.

The study involved visits to families of isolated children, interviews with the providers of the various educational services concerned, and an examination of the details of the services themselves. These services are:

- the Primary Correspondence School
- some Priority Country Area Program Projects
- and the Isolated Children's Special Education Unit.

The six sections of the report are concerned with the Primary Correspondence School, the Schools of the Air, other educational services provided for pupils of the Primary Correspondence School, liason between the various agencies, and issues for further investigation.

:project evaluation
:needs assessment
:rural education
:educational planning
:distance education

#199
WALLACE, Michael.
Audio-Tutorials: An annotated bibliography. Monograph no.19., Centre for Advancement of Teaching, Macquarie University, August, 1976.

The term "audio-tutorial" refers to a system of teaching that is based on the use of audio-visual media in education. This system, developed in the United States, is oriented toward programmed and individualised instruction.

In this publication the author has compiled a selected bibliography of references that will aid educationalists in the design, development and implementation of audio-tutorials in their courses. The references provide generalized information about audio-tutorials as well as details of specialized uses in specific disciplines and at several educational levels (elementary, secondary, and tertiary education). References within the three educational levels are also cross-indexed by disciplinary area.

Under the classification "research" the author has included only those references considered as examples of "validly constituted research", excluding what he calls "descriptive developmental reports". The bibliography has a bias towards applications of the audio-tutorial system in the sciences, particularly at the tertiary level, reflecting the author's own professional interests.

A separate section offers a guide to the relative quality of references, using the terms "essential", "very useful" and "marginally useful".

:audio-tutorials
:annotated bibliography
:educational technology
:literature review

#200
WALLACE, Michael.
Audio-Tutorials in Teacher Education. Monograph no.20. Centre for Advancement of Teaching, Macquarie University, August, 1976.

In this report the author describes and evaluates the audio-tutorial

as an educational innovation. The audio-tutorial was first designed and implemented in the United States as a system of programmed and individualised instruction. It is described as a "multi-media" or "integrated media" approach to learning, which involves a "set of learning media integrated by means of an audio-tape" and is geared to a student's individual need. The audio-tutorial removes the need for students to attend tutorials at fixed times, and makes use of a variety of support materials.

Wallace first sets out some guidelines for assessing educational innovations, in relation to the stated goals of the educational system, the body of the theory surrounding the educational process, and...the overall increase in efficiency of the educational process as a consequence of the innovation. He then describes the audio-tutorial system, and evaluates it in terms of an educational innovation. Further chapters examine the application of this system to in-service and pre-service teacher education, discuss examples of the system in Australia and overseas, and review the research relating to the system.

The report concludes with the observation that the audio-tutorial system is a worthwhile educational innovation if it is applied with clearly defined objectives, and is carefully structured and evaluated. It is considered especially suited to teaching science, environmental studies, and mathematics, and is also useful in pre-service and in-service teacher training.

:audio-tutorials :educational technology
:annotated bibliography :literature review

#201
WANIEWICZ, Ignacy.
"The T.V., Ontario Academy: The use of television broadcasting and computer-managed learning for adults," Educational Broadcasting International, vol.14, no.2, (June, 1981), pp.78-81.

This article describes a Canadian project which provides instructional television throughout Ontario, and includes a student monitoring and interactive component.

The T.V. Ontario Academy is based around specially designed television programmes, intended for an audience of socially isolated viewers who might not have normally undertaken a learning project on their own. It comprises high quality television broadcasts, a computer managed learning system, and specially designed course materials aimed at encouraging self-directed learning. Programmes, so far include a Health and the Environment Academy, Music of Man Academy, and a Parents Academy, each running for several weeks.

The T.V. Ontario project also includes a learner's guide, associated reading materials, a computerized system of learning management, and newsletters. The latter three stimulate interaction between

audience, and the Academy.

The article also discusses the preparation of an Academy, and summarizes the findings of an evaluation of three of the Academies. The evaluation was generally found to be favourable.

:television in education :project evaluation
:distance education

#202
WESTERN AUSTRALIAN SATELLITE COMMUNICATIONS: EDUCATION ADVISORY GROUP.
"Education in Western Australia and the domestic satellite: A discussion paper," Perth, Western Australian Institute of Technology, 1981.

This brief document is a policy statement by a group of educationalist on behalf of their respective institutions, expressing strong interest in the use of an Australian domestic satellite for future educational broadcasting in Western Australia.

The group, called the Western Australian Satellite Communications Education Advisory Group, considers the status of existing educational broadcasting services (national and public radio and television services), and then discuss the factors affecting likely future growth, and areas of development for educational broadcasting via satellite. The discussion is presented against the background of Western Australia's unique educational needs (i.e., a population which is scattered over a large geographical area).

The paper states that the provision of increased educational opportunities through support services to external students (in terms of individual home study and regional centres) should be given a high priority.

There is also a section outlining the need for a self-evaluation programme to identify the educational requirements, develop appropriat teaching strategies and monitor the effectiveness of newly introduced forms of broadcasting and communication. An important point is also made expressing the need for development of a broadly based educational broadcasting policy.

:communications satellites :distance education
:needs assessment :policy and planning
:television in education :radio in education

#203
WHITE, P. B., SEGALL, P. and HOAD, I.
Public Television in Melbourne: The preview broadcasts and beyond. Melbourne, Open Channel Co-operative Limited, 1982.

In this report the authors describe and evaluate the public television preview broadcasts which were presented on Channels 0/28 in Melbourne and Sydney. The overall aims of this study are to examine possible costs and benefits of public television with respect to existing educational broadcasting services; to analyse audience responses to specific programs, in order to provide recommendations for a permanent public television service, and to assess general audience responses to the preview programmes, with a view to formulating policy objectives for public broadcasting.

The preview broadcasts were transmitted on Channel 0/28 at regular times and were accompanied by a publicity campaign, program guide and media conferences. Using a combination of viewer surveys, selected viewing panels, interviews, and discussions with a number of State Government departments, e.g., Youth, Sport and Recreation, Community Welfare, etc., the study found that it would be possible to justify the development of a public television service. Specific recommendations include the need for consultation with relevant interested organizations, development of appropriate funding strategies, and others relating to legislative, administrative and technical details.

:public television :television in education
:project evaluation :economic analysis
:policy and planning

#204
WHITE, P. B.
"Rethinking Australian Communications Policy: Issues in social planning," Australian Journal of Social Issues, v.15, n.2, (May, 1980) pp. 135-147.

This paper examines the potential use of new communication technologies for delivering educational, health and other social services in Australia. A brief outline of overseas developments in educational telecommunications is followed by a discussion of arguments for, and against, telecommunications in education. It is argued that the absence of a co-ordinated communication policy development means that the social costs and benefits of social service applications are not systematically considered.

The relationship between communications and social planning and regulations is discussed, with specific reference to teletext and communication satellites.

Following a discussion of the Galbally Report, and overseas experience it is suggested that there should be a move away from technology

oriented planning to a problem centred approach. This would lead to a better understanding of the social costs, benefits and opportunities inherent in various communication policy options.

:telecommunication in education :policy and planning
:social issues :communications satellites
:educational planning

#205
WILEY, Ann L.
Sources on Information for Instructional Technology. ERIC Clearinghouse on Information Resources, Syracuse University, Syracuse, New York, 1982.

This United States oriented resource guide and bibliography offers some valuable information on searching and evaluating materials on instructional technology. The guide begins with a survey of services available to instructional technologists, such as libraries, the ERIC system, on-line information services and State and Regional Education Centres. There are useful sections on developing a search strategy, and documenting and evaluating information. The main source list is arranged under the following subject headings:

Instructional technology
Bibliographies
Instructional development; setting objectives; bibliographies
Instructional materials
Instructional techniques
Training and human resource development
Computers in education; bibliographies
Learning theory and applied behavioural science
Systems theory
Management of instructional programs
Facilities design
Evaluation; bibliographies
Research and statistics
Reference works; dictionaries, glossaries and terminology; encyclopaedias; directories; yearbooks and statistics; standards
Instructional materials; directories and evaluative information; source lists
Bibliographies of source lists
Indexes and databases: indexes
Databases: examples
directories

:annotated bibliography :educational technology
:resource guide :educational planning

#206
YOUNG, E. L., and HURD, J. N.
Pacific Basin Communications Study. vol.1, Washington D.C., National Aeronautics and Space Administration, October, 1981.

The two volumes of this "Pacific Basin Communications Study" represent the findings of a one year study, undertaken by the Public Service Satellite Consortium, under the Experiment Co-ordination and Mission Support Program of the Communication Division, N.A.S.A.

The study surveys current telecommunications in the Pacific Basin and evaluates user needs with a view towards recommendations for the development of a satellite-based telecommunications system.

The short sections on education highlight the need for improved communications in a developing nation hampered by geographical isolation. There is a short description of educational broadcasts made to teachers and students in some areas. It states that these are constrained by the fact that they are produced by broadcasting personnel, rather than by education specialists.

The need for improved telecommunications and for additional, trained staff in the Pacific Basin countries is made clear in this report.

:communications satellites
:needs assessment
:educational planning
:telecommunications in education
:distance education

APPENDIX A

PROJECTS FUNDED BY THE ACEUCT

A Trial in the Diverse Uses of Communications Technology

The South Australian Education Department has conducted experiments using telephone links for teaching purposes in isolated rural schools. The 1983/84 projects build on that earlier work. They are designed to overcome technical problems associated with adapting classroom and teaching practice to the limitations of particular media. Methodologies for teaching languages and the arts, particularly music, are being developed.

Contact: Mr.C.W.Dunnett
Educational Technology Centre
Education Department of South Australia
81 Flinders Street
Adelaide
S.A. 5000

Staff Communication Among Isolated Secondary Schools Using a Teleconference Network

Inservice education is difficult and expensive in the Northern Territory when it is attempted by conventional means. This trial is linked to the development of core curricula at junior secondary levels. Seven secondary schools are linked with curriculum services, research and administrative units by a teleconference network.

Contact: Mr R F Hockley
Alice Springs School of the Air
P O Box 1220
Alice Springs
N.T. 5750

Co-ordination of Satellite Access for Educational Trials Using Voice Teleconferencing

The ATS-1 communication satellite is operating beyond its designed lifetime. It is of value for short term experimentation and demonstration. This grant assists in the co-ordination of experimentation by educational institutions and authorities throughout Australia.

Contact: Dr E S Seumahu
Department of Electronics and Communication Science
La Trobe University
Bundoora
Vic 3083

Alternative Styles of Production and Dissemination of Video Programmes for Lower Secondary Correspondence Students

This project involves a study of the production and use of video programmes. It is concerned with assessing the cost effectiveness of various means of distributing video materials, and the student use of those materials.

Contact: Mr P Deschamp and Dr J Fitzpatrick
Research Branch
Education Department of Western Australia
151 Royal Street
East Perth
W A 6000

Interactive Television Teaching Project

Student tutorial groups in Launceston will become part of corresponding tutorial groups in Hobart through a two-way television link. The teaching and production techniques needed to integrate the groups in the teaching and discussion processes will be evaluated and comparisons will be made with control groups. The study is of interest to secondary education and TAFE.

Contact: Prof. K.E. Collis
Department of Education
University of Tasmania
G P O Box 252C
Hobart
Tasmania 7001

Training Itinerant Workers

Managers working at forty hotels, motels, clubs and restaurants throughout the Territory where itinerant workers are employed will help to assess the effectiveness of distance training which uses print and video media. The results of this project could influence on-the-job training in the Territory where it might be possible to use the domestic communication satellite for the transmission of video material.

Contact: Mr G S White
School of Tourism and Hospitality
Community College of Central Australia
P O Box 795
Alice Springs
N T 5750

Primary School Distance Teaching: The Child as an Isolated Learner

This project is designed to discover how primary school children learn in an isolated distance teaching environment. It seeks to forestall any undue emphasis on the purchase of communication technology by focusing on how distance teaching materials are used by the recipients.

Contact: Mr D Tomlinson
National Centre for Research on Rural Education
The University Of Western Australia
Nedlands
W A 6009

The Use of FM Radio Subcarrier for the Provision of Tutorial Interaction in University Distance Education

The project is designed to establish a trial facility which will allow students who are involved in home-based university studies to interact with campus-based tutors by means of a private FM subcarrier signal linked to a telephone talk-back line.

Contact: Mr Patrick Guiton
External Studies Unit
Murdoch University
Murdoch
W A 6150

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